African and Asian Rhinoceroses – Status, Conservation and Trade

A report from the IUCN Species Survival Commission (IUCN/SSC) African and Asian Rhino Specialist Groups and TRAFFIC to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP14) and Decision 14.89

Tom Milliken [3,1], Richard H Emslie[1,2] and Bibhab Talukdar [2,1] (compilers)

[1] IUCN/SSC African Rhino Specialist Group (AfRSG)

[2] IUCN/SSC Asian Rhino Specialist Group (AsRSG)

[3] TRAFFIC

20 November 2009

1. Introduction

The CITES Parties, through *Resolution Conf 9.14 (Rev. CoP14)*, have mandated IUCN/SSC's African Rhino Specialist Group (AfRSG), Asian Rhino Specialist Group (AsRSG) and TRAFFIC to prepare a report for the 15th meeting of the Conference of the Parties (CoP15) *"on the national and continental conservation status of African and Asian rhinoceros species, trade in specimens of rhinoceros, stocks of specimens of rhinoceros and stock management, incidents of illegal killing of rhinoceroses, enforcement issues, and conservation actions and management strategies, with an evaluation of their effectiveness".* This report constitutes fulfilment of that mandate.

2. African Rhinos

2.1 Status and trends

Continental rhino numbers were updated at the AfRSG meeting in May 2008, with estimates reflecting the population status of Africa's rhinos as of December 2007. Despite high levels of poaching (see 2.2 Illegal killing), both rhino species have continued to increase in the wild, with **white rhino** (*Ceratotherium simum*) up to 17,475 and the **black rhino** (*Diceros bicornis*) up to 4,230 (Table 1).

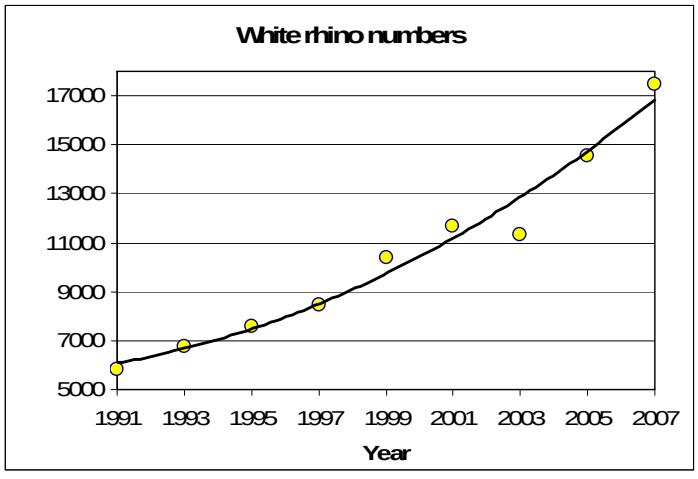
Table 1: Estimated numbers of African rhino by country as of December 2007
(See text below for some updated numbers; totals in table rounded off)

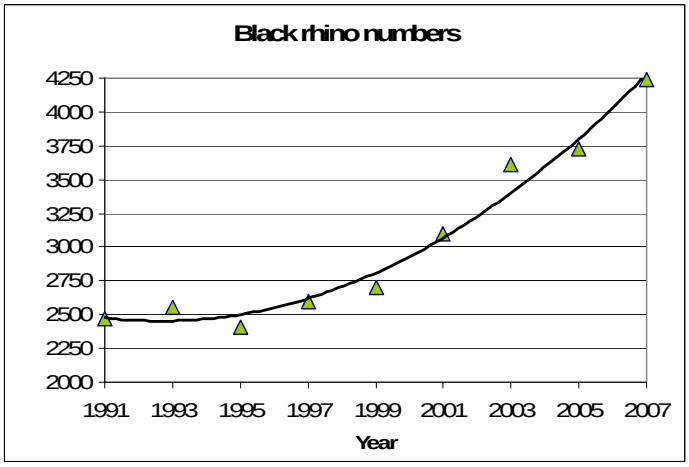
Species	White rhino				Black rhino				
Subspecies	*C.s.cottoni* (northern)	*C.s.simum* (southern)	Total	Trend since 2005	*D.b.bicornis* (south-western)	*D.b.michaeli* (eastern)	*D.b.minor* (southern-central)	Total	Trend since 2005
Botswana		106	**106**	Up			7	**7**	Stable
DR Congo	4		**4**	Stable?					
Kenya		303	**303**	Up		577		**577**	Up
Malawi							16	**16**	Up
Mozambique		9	9	?			?	**?**	?
Namibia		370	**370**	Up	1,435			**1,435**	Up
Rwanda						1		**1**	Stable
South Africa		16,273	**16,273**	Up	113	54	1,321	**1,488**	Up
Swaziland		89	**89**	Up			18	**18**	Up
Tanzania						67	56	**123**	Up
Uganda		6	**6**	New					
Zambia		1	**1**	Down			16	**16**	Stable+Intro
Zimbabwe		313	**313**	Stable			546	**546**	Down
Totals	**4?**	**17,470**	**17,475**	**Up**	**1,550**	**700**	**1,980**	**4,230**	**Up**

The trends since 1991 are shown in Figure 1. Since 1995, the average annual net growth rates of white and black rhinos have been 7.2% and 4.8%, respectively. South Africa, Namibia, Zimbabwe and Kenya collectively conserve most black (95.7%) and white (98.8%) rhino. New populations have been created and rhino numbers have increased in all of these countries except Zimbabwe, where both species are now declining. Rhino populations in Botswana, Swaziland and Tanzania also now exceed 100 animals. The white rhino is currently listed as Near Threatened on the IUCN Red List of Threatened Species, and the black rhino is listed as Critically Endangered.

The increase in rhino numbers since 1995 has corresponded with a rise in the number of populations rated by IUCN/SSC AfRSG as continentally ***Key*** or ***Important*** based on population size, proportion of subspecies conserved and population trend. In 2007, there were 129 ***Key*** and ***Important*** populations in Africa, up from 112 in 2005 and 60 in 1995. These populations conserved some 85% of all African rhino in 2007, with the remaining 438 smaller populations holding around 15% of Africa's rhinos.

Figure 1: Changes in numbers of white and black rhino in Africa 1991-2007

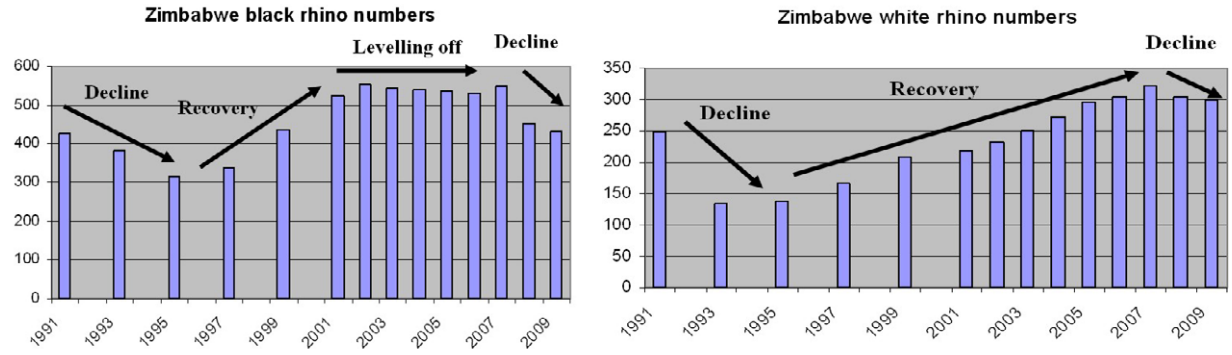




The trend of increasing rhino numbers on private land also continues and, in 2007, 24.9% were privately-owned, with a further 4.7% managed for the State under various custodianship arrangements. There have also been cases where rhinos have been introduced into community reserves. Sales of surplus rhinos by the State to private owners continue to provide important additional revenue to government conservation budgets.

More recent population data are becoming available. A provisional 2009 estimate for South Africa indicates 18,553 white and 1,570 black rhinos (M. Knight *in litt.*, 2009), representing a net annual growth rate of 6.8% and 4.6%, respectively, since 2007. Kenya's rhino population is also increasing with 2008 estimates for black and white rhino showing 5.6% and 6.6% annual increases, respectively. Numbers have also increased in Swaziland and Botswana since 2007. While updated figures are not yet available for Namibia, further growth in that population is expected (P. du Preez, pers. comm., 2009). In Zimbabwe, however, black rhino numbers levelled off between 2001 and 2007 and then declined markedly over the next two years due to poaching, and white rhino numbers have also started to decline since 2007 (Figure 2). Current poaching levels in Zimbabwe are unsustainable and threaten to erase the rhino population gains achieved since the mid-1990s.

Figure 2: Provisional revised estimates of black and white rhino numbers in Zimbabwe from 1991-2009 showing the impact of increased poaching



The small white rhino population in Mozambique is also threatened by poaching. Uganda's introduced population of southern white rhino has now had two births, whilst the increase in black rhino numbers in Zambia since CoP14 is largely due to further importation of founder rhino.

The CoP14 report on rhinos noted that the western black rhino subspecies (*D. b. longipes*) was most likely extinct, and further surveys in parts of Cameroon have failed to find any signs of rhino. Since CoP14 another subspecies, the northern white rhino (*C. s. cottoni*), has also probably gone extinct in the wild. Four animals were last seen in Garamba National Park (NP) in the Democratic Republic of Congo in 2006 and spoor found in 2007. Since then there have been no signs of rhino despite intensive ground-based searches, except for a 2-3 year old poached carcass found in 2008. Reports of three northern white rhinos in southern Sudan need further confirmation (R. Brett, pers. comm., 2009). A few specimens of this subspecies survive in captivity outside of Africa, but the only four animals potentially capable of breeding are inter-related; conservation of adaptive northern white rhino genes and their eventual re-introduction into former range now depends upon successful cross-breeding of surviving animals with southern white rhino. The Dvur Kralove Zoo (Czech Republic) and partners have agreed a plan to move all remaining potentially reproductive rhinos to a secure reserve in Kenya for breeding.

2.2 Illegal killing

Between January 2006 and September 2009, a minimum of 470 rhino were poached in seven rhino range States, but three countries (Botswana, Namibia and Swaziland) reported no poaching losses (Table 2). Data for Malawi, Mozambique, Tanzania and Uganda are incomplete. Aggregating the data for all countries shows that poaching has markedly escalated over the last two years, although data for 2009 remain incomplete (Figure 4). The far less numerous black rhino comprised nearly half of the losses throughout Africa.

Table 2: Total numbers of detected illegally killed rhinos by poaching method, 2006-2009

Country	All Rhinoceros 2006-2009				Total
	Illegal Killing				
	Shot	Snared	Speared, Stabbed, Poisoned	Unknown but presumed poached	
Botswana	0	0	0	0	**0**
DR Congo	0	0	0	1	**1**
Kenya	16	1	0	0	**17**
Malawi	0	0	0	0	**0**
Mozambique	5	0	0	0	**5**
Namibia	0	0	0	0	**0**
South Africa	152	2	1	55	**210**
Swaziland	0	0	0	0	**0**
Tanzania	0	0	0	1	**1**
Uganda	0	0	0	0	**0**
Zambia	1	0	0	0	**1**
Zimbabwe	149	6	4	76	**235**
Grand Total	**323**	**9**	**5**	**133**	**470**

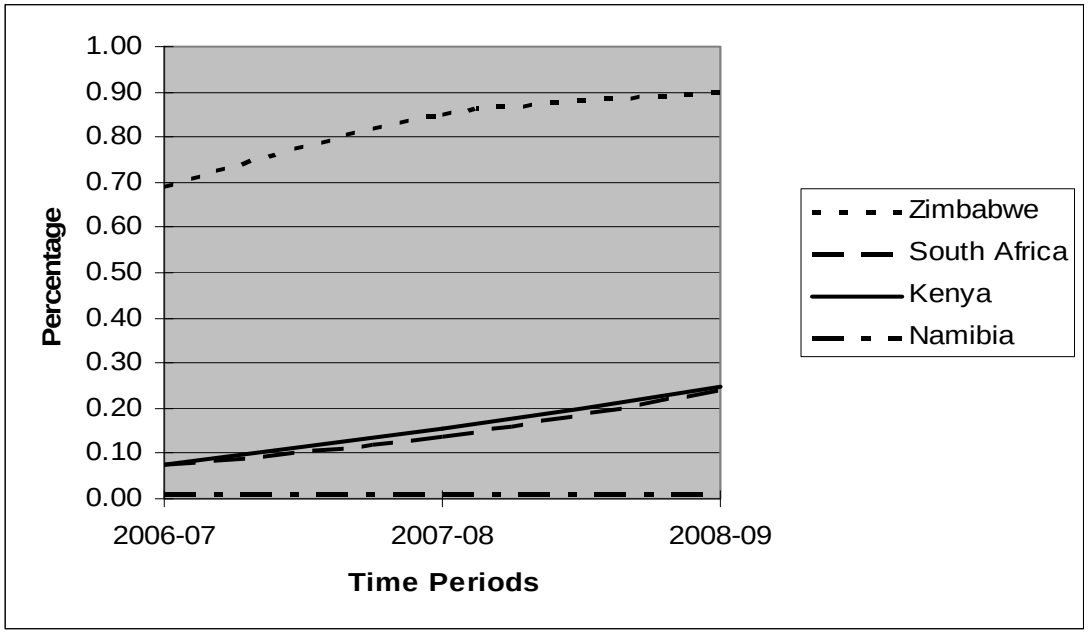
The majority (69%) of illegally killed rhinos continue to be shot, with the percentage increasing when compared with data for the period 2000-2005. At the same time, the number of rhinos dying through snaring (primarily for bush meat) has markedly declined and seems to have been replaced by targeted poaching for horn with guns in most areas where snaring formally occurred. AK47 assault rifles and 303 calibre rifles have been the most commonly used weapons but, recently, heavier calibre arms (e.g. .375s and .458s) are now being used (Taylor and Milliken, in prep.). There has also been a reduction in the spearing, stabbing or poisoning of rhinos, but the fact that ”unknown” illegal killings have almost doubled since 2006 may mask true losses from poisoning in recent years. In Mozambique, South Africa and Zimbabwe in 2008 and 2009, quieter methods to kill rhino to avoid detection (i.e. no gunshot noise) have been employed, including the use of veterinary immobilizing drugs, poison and cross-bows. This points to a growing and cunning sophistication in the illicit procurement of rhino horns and the involvement of marksmen with specialized skills and equipment (Taylor and Milliken, in prep.).

Since 2006, the pattern of rhino poaching in Africa has shifted away from eastern Africa. With the probable loss of the last rhino in Garamba NP (see 2.1 above), the Democratic Republic of the Congo has essentially ceased to be a factor in the rhino horn trade in east Africa. While Kenya experienced appreciable levels of poaching from 2000 to 2005, and recorded a net loss of 70 rhino horns during this period (Milledge, 2007), the illegal killing of rhinos subsequently declined, although losses in 2008 and 2009 are beginning to increase again. Data for Tanzania, although requested, were not provided.

Since 2006, 95% of all detected or presumed rhino deaths in Africa from illegal killing have occurred in Zimbabwe and South Africa. These two nations collectively form the epicentre of an unrelenting poaching crisis in southern Africa. In South Africa, the illegal off-take has reached the highest levels in recent history, impacting not only Kruger NP on the country’s border with Mozambique, but also other protected areas in KwaZulu-Natal and a range of private sector game ranches for the first time in Limpopo, Gauteng, North West and Eastern Cape provinces (M. Knight, *in litt.*, 2009). Similarly in Zimbabwe, serious rhino poaching is now affecting virtually all rhino populations within the country, even those in the southeast lowveld that were previously considered to be well protected and which had exhibited steady population growth.

Differences in law enforcement effort have been demonstrated to influence the probability of detection of poached rhinos and can vary considerably amongst rhino range States and even between different rhino areas within the same country. While patrol effort information is not available to adjust the data in Table 2, it is still possible to establish a crude measure of poaching intensity by examining the proportion of illegally killed mortalities against the total number of detected deaths. Figure 3 shows changes in poaching intensity since 2006 for the four largest rhino range States.

Figure 3: Smoothed poaching intensity trends in four rhino range States expressed as the percentage of detected mortalities attributed to illegal killing



Note: As some detected carcasses in a given year may be more than one-year old, and to better identify the underlying "pattern", the data have been expressed in moving two-year units.

The poaching intensity data corroborate the alarmingly high and progressively worsening poaching situation in Zimbabwe since 2006, with 90% of all detected rhino mortalities in the country in 2009 representing poached animals. A modeling exercise using conservative underlying growth rates indicates that current population sizes in some areas are significantly lower than what would be expected given reported poaching mortalities, indicating that actual poaching losses in Zimbabwe have been higher than detected (Emslie, *in litt.*, 2009). In comparison with data from 2000-2005 (Milledge, 2007), poaching pressure in South Africa is now also moving steadily upward, with about a quarter of all mortalities currently representing illegally killed animals. In Kenya, poaching intensity peaked in 2001-2003 when it accounted for some 60% of the detected carcasses (Milledge, 2007), then dropped markedly in 2006 to under 10%. Poaching intensity in Kenya now appears to be increasing once again and, in relative terms, is on a par with that in South Africa (Figure 3; Table 5). In stark contrast, Namibia has continued to experience a negligible poaching challenge throughout this entire period.

The seriousness of the current situation in Zimbabwe is again evident in the fact that losses since 2006 represent 26% of the living rhino population (Table 5), and 89% of all black rhinos illegally killed in Africa since 2006. Provisional estimates suggest that Zimbabwe's rhino population has declined by 14.7% since the end of 2007, with the bulk of the decline affecting black rhino (i.e. 546 dropping to 432) (Emslie, *in litt.*, 2009). Such attrition not only results in a serious downward trend in national numbers, it also denotes a considerable erosion of *D. b. minor* numbers at a continental level. In contrast, whilst South Africa's poaching losses over the same period are only marginally less than Zimbabwe's by number, they represent only 1.2% of the total rhino population and less than half a percent per annum. In South Africa, poaching has predominantly been of the more numerous white rhino and, at this point, has not significantly inhibited overall population growth of either species in the country.

2.3 Trade

The previous rhino report to CoP14 documented a steady increase in the volume of rhino horns leaving the African continent from 2000 to 2005 (Milledge, 2007). In terms of trade routes and dynamics, this illegal activity was primarily centred upon southern Africa, but rhino losses and trade in horns were also reported in the east African region. A summary of rhino crime indicators for individual range States resulted in the classification of the Democratic Republic of the Congo and Zimbabwe as countries of "high concern" and Kenya and South Africa as countries of "medium concern". This assessment contributed to the adoption of *Decision 14.90* which called upon the CITES Secretariat to "*examine the implementation of Resolution Conf. 9.14 (Rev. CoP14) in the range States where illegal poaching of rhinoceroses appears to have increased and to pose a significant*

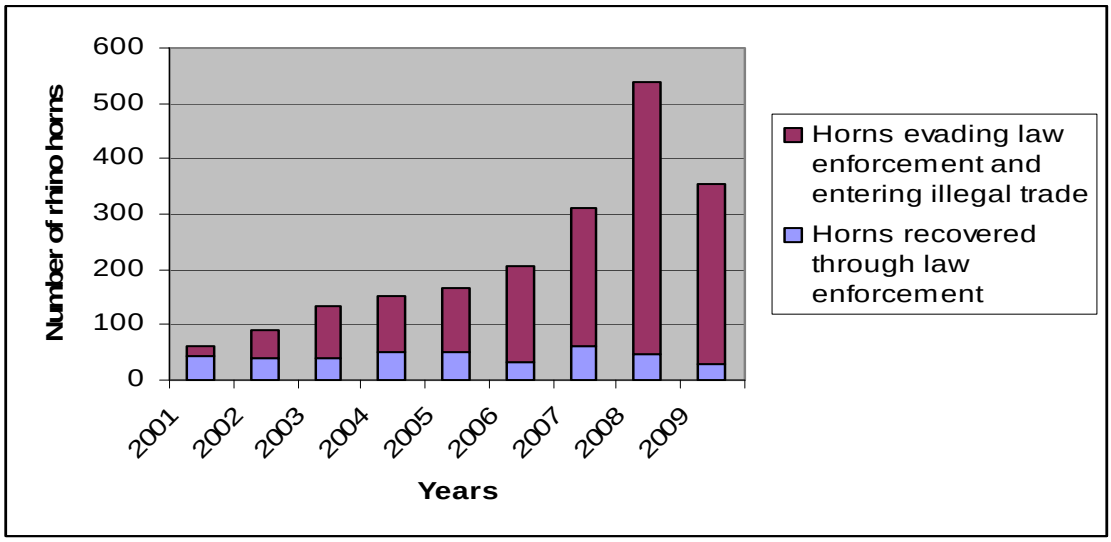
threat to populations of rhinoceroses, particularly in the Democratic Republic of the Congo, Nepal and Zimbabwe".

Table 3: Estimated number of rhino horns for illegal markets in Asia, January 2006- September 2009

Description of source or recovery of horns	Number of horns
Source of horns to illegal markets	
Horns taken from poached rhinos	940
Horns stolen from natural mortalities	6
Thefts from government stockpiles	16
Other thefts	55
Horns illegally sold from private stocks	>200
Horns obtained from legal trophy hunts	286
Other illicit exports	18
Subtotal:	***1,521***
Recovery of horns by government enforcement agencies	
Recoveries in the field	129
Confiscations/seizures	43
Subtotal:	***172***
Balance of horns lost to illegal trade	**1,349**

Since 2006, illegal rhino horn trade has progressively worsened. The combined loss of horns from poaching, thefts from natural mortalities, government stocks and other private collections, abuse of legal trophy hunting and illegal private sector sales suggests that a minimum of 1,521 rhino horns were destined for illegal trade in this time period (Table 3). Compared to the six-year period 2000-2005 when a minimum of 664 horns were acquired for illicit trade purposes (Milledge, 2007), this figure represents more than a two-fold increase in the annual illegal rhino horn trade in less than four years.

Figure 4: Estimated minimum number of rhino horns recovered and lost to illegal trade in Africa, 2001-2009



Deducting recoveries in the field and from seizures, an estimated 1,349 rhino horns have been lost to illegal trade, a rate of 30 rhino horns each month since 2006. Actual quantities are believed to be far greater as undetected poaching and other thefts have certainly transpired. Further, the volume of horn that has been illegally sold by the private sector in South Africa also remains unknown but has been conservatively estimated at 50 horns annually (Table 3; see 2.7 below). Even with these caveats, the number of rhino horns being traded has steadily grown, with 2008 probably representing the most intensive illegal movement of rhino horn over the last 15 years (Figure 4). Using average horn weights, more than 3,100 kg of rhino horn potentially reached illegal Asian markets from 2006 to 2009.

Figure 5: Changes in the proportion of rhino horns being recovered prior to entering illegal trade in Africa, 2001-2009

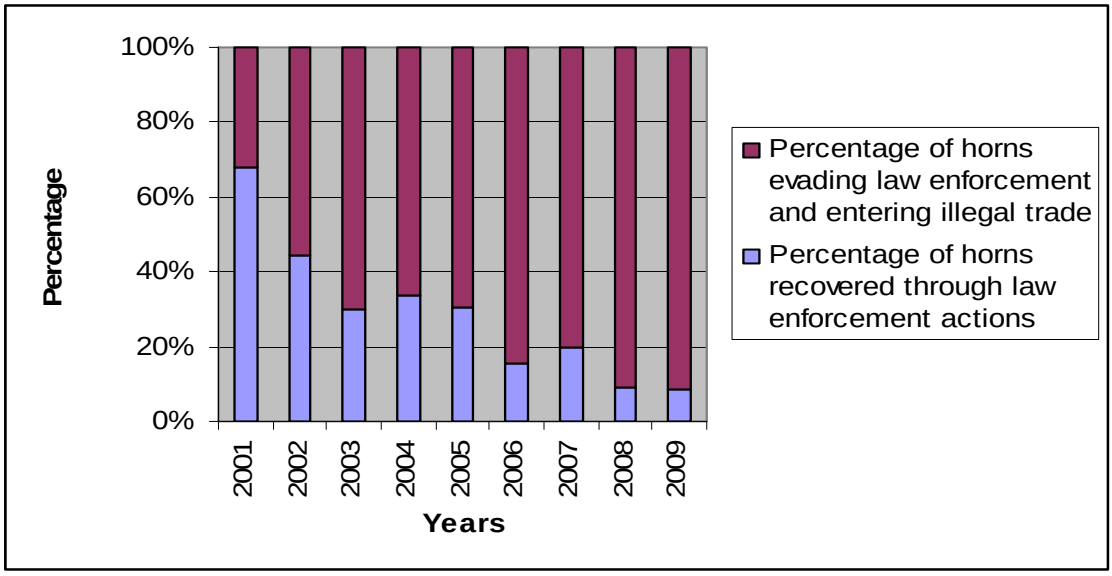


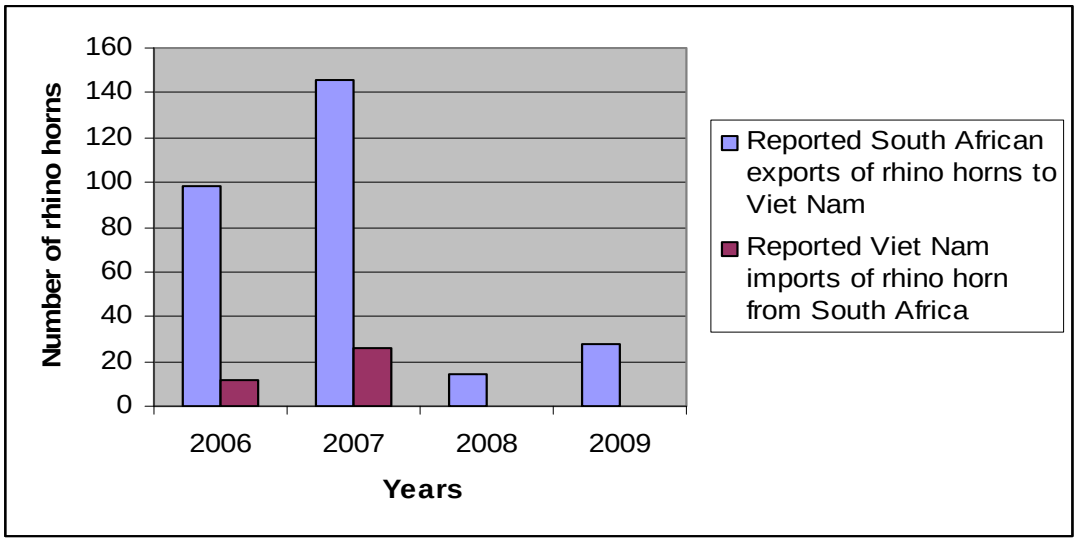
Figure 5 shows a progressive decline in rhino horn recoveries since 2001, suggesting a precipitous drop in law enforcement effectiveness in Africa overall, but especially so in Zimbabwe and South Africa. In 2001, 68% of all illegally procured horns were intercepted but, by 2009, horn recoveries had dropped to less than 8%, indicating that currently nine out of ten illegal horns are moving out of Africa and into Asian consuming markets without interference.

CITES has long provided for the sport hunting of white rhinoceros as a legal avenue of trade, and the current annotation accompanying the Appendix II listing of the *C. s. simum* populations in South Africa and Swaziland specifically allows for the export of hunting trophies and "*live animals to appropriate and acceptable destinations*". Since the adoption of *Resolution Conf. 13.5* in 2004, South Africa and Namibia have also each been given an annual export quota of five male *D. bicornis* hunting trophies, although the species remains in Appendix I of the Convention.

South Africa and Swaziland have exported live rhinos over the last four years, but all trade from Swaziland was part of an effort to improve white rhino stocking rates in the country. South Africa's exports of white rhinos abroad are far more contentious. Between 2006 and 2009, CITES data show that South Africa reportedly exported 193 rhinos, whilst 235 rhinos were received by other countries over this period. The discrepancies in trade volumes include some inexplicable anomalies. For example, South Africa reported exporting 61 rhinos to China in 2006 and 2007, whilst China recorded receiving 117 rhinos from South Africa during the same time. Indeed, since 2000, Chinese data suggest 141 rhinos were obtained from South Africa, and reports of "horn harvesting" of captive rhinos in China have surfaced (but need further verification before being accepted as credible). Clarification on the purpose of keeping large aggregations of captive rhino in China would be welcomed. The deliberative process and criteria used by South Africa in determining what constitutes an "*appropriate and acceptable destination*" for live rhinos also remains to be clarified. Recently, concerns about these issues in South Africa have resulted in a temporary moratorium being placed on live rhino exports.

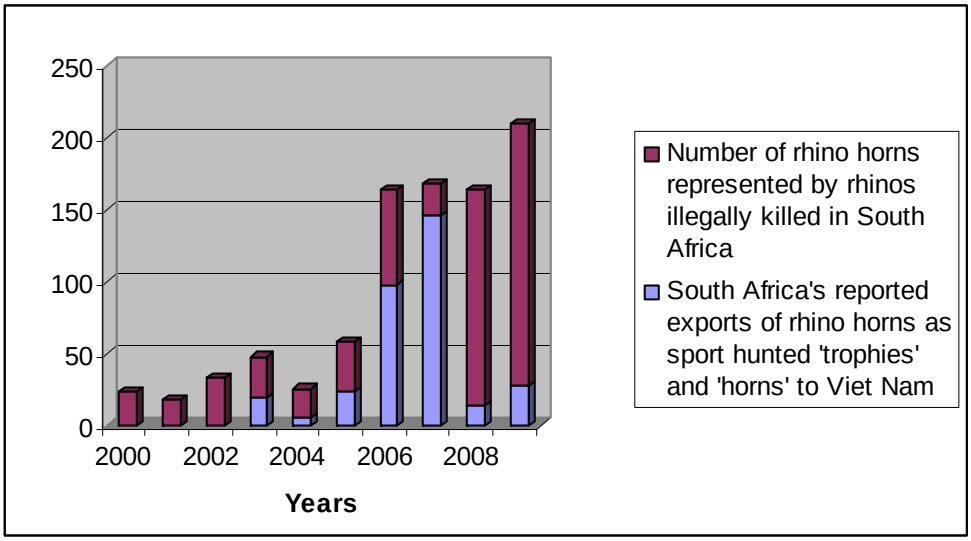
Sizeable trade in trophies from sport hunted rhinos has also occurred from South Africa, with reported exports totaling 470 trophies and 121 horns from 2006 to 2008. Assuming "horns" refer to single horns and "trophies" comprise both back and front horns, this trade represents 1,061 horns or some 531 rhinos. It is of grave concern that not all hunting trophies remain non-commercial "personal effects", a phenomenon that has coincided with the advent of Vietnamese nationals as sport hunting clients. In 2003, for the first time, South Africa issued CITES permits for nine rhino trophies and two rhino horns to be exported to Viet Nam. A year later, three more trophies were reportedly exported. From that modest beginning, trade in rhino horns to Viet Nam rapidly grew to entail some 286 rhino horns from 2006 through 2009 (Figure 6). Whilst this number appears high, Vietnamese nationals reportedly conducted 203 white rhino hunts in South Africa in 2005-2007 (M. Knight, *in litt*., 2008), which would have yielded 406 rhino horns; South African exports, however, only account for 268 horns to Viet Nam during this same period, suggesting that one-third of these hunts took place without the subsequent acquisition of CITES documents. Other CITES exports of rhino products to Viet Nam from South Africa in 2006 and 2007 included ten bones, eight feet, three skins, two skulls, one leather product and eight live rhinos.

Figure 6: **South Africa's reported exports of rhino horn contrasted with Viet Nam's reported imports of rhino horn, 2006-2009** (CITES annual report data)



According to CITES import data, Viet Nam has received only 38 rhino horns since 2006, indicating that 87% of the South African trade apparently went undeclared at the time of importation (Figure 6). Unsurrendered permits were allegedly re-used (until their eventual expiration) to accompany additional shipments of rhino horns acquired through illegal means (Taylor and Milliken, in prep.). Investigations in South Africa have revealed disturbing evidence of organized crime, including: the frequent involvement of a small number of Vietnamese nationals in rhino hunting, often on the same game ranches repeatedly; numerous cases whereby Vietnamese "trophy hunters" paid above market price for rhino hunts, but then had to be instructed how to shoot and would completely forego any proper trophy preparation; the issuance of export permits for rhino trophies to Vietnamese nationals who had previously been identified in ongoing rhino crime investigations; the repeated involvement of Viet Nam Embassy personnel or vehicles in the illegal procurement and movement of rhino horns within and out of South Africa, one of whom invoked "diplomatic immunity" to avoid arrest; the belief in law enforcement circles that various rhino poaching incidents have directly involved Vietnamese buyers; and arrests of Vietnamese men and women in possession of illegal rhino horns (Taylor and Milliken, in prep.). Thai and Chinese nationals have also been arrested and convicted of rhino horn crimes in South Africa, and Cambodian citizens have conducted rhino hunts. Finally, South Africa issued export permits in 2007 for six rhino trophies to go to China, another country not traditionally active in trophy hunting in Africa and which did not subsequently report receiving any rhino trophies as imports.

Figure 7: **South Africa's rhino horn exports to Viet Nam and the illegal killing of rhinos in South Africa**



Recognition of these abuses led South Africa to promulgate new trade controls and hunting regulations (see 2.8 below). Following implementation in February 2008, the number of reported legal rhino hunts by Vietnamese citizens declined significantly, but an immediate escalation in rhino poaching in South Africa occurred (Figure 7). Whether these two parallel events are directly correlated or not needs to be established, but anecdotal evidence seems to suggest a relationship (Taylor and Milliken, in prep.). Further, allegations of unreported rhino hunts involving Vietnamese suggest that the new hunting regulations are being thwarted by some private landowners who have no intention of applying for permits, leaving the onus on the hunter to determine how and when to move any trophies abroad (Taylor and Milliken, in prep.). The number of rhino on some private properties remains unknown and undisclosed hunting could presumably occur at the discretion of individual owners. South Africa's new legislation is designed to track live rhinos and rhino horn in the private sector, and to control the issuance of hunting permits, but the overall impact will ultimately depend upon effective implementation.

South African stakeholders have discussed the possible introduction of an annual sport hunting quota for white rhinos. With the decline in legal rhino hunting since 2008, an annual quota is probably not required on biological grounds, but it could be a useful additional administrative tool to regulate rhino hunting. To achieve meaningful oversight at the national level, mandatory reporting requirements on the status of private rhino ownership and all instances of rhino hunting (whether it involves foreign clients or not, and whether trophies are to be exported or not) need to be implemented and enforced.

Currently, most rhino horns leaving southern Africa are destined for end-use markets in southeast and east Asia, especially Viet Nam and China; available evidence does not (at this time) implicate Yemen, another traditional end-use market, in this trade. Although rhino horn trade is ostensibly controlled and importation for commercial purposes prevented in Viet Nam, there is no system to register and track the private ownership of sport hunted trophies to prevent their entry into trade (Turton, in prep.). Further, the implementation of Viet Nam's legislation with respect to internal trade in rhino horn medicines remains to be assessed. Whilst rhino horn is a time-honoured ingredient in the traditional medicinal systems of Asia, currently in Viet Nam (and possibly in neighbouring China) it is being marketed as a cure for non-traditional medical conditions such as life-threatening cancer (Turton, in prep.). In Viet Nam, rhino horns (including fake horns) are being sold through traditional medicine stores and hospitals, whilst other shops promote special bowls for grinding and mixing rhino horns. Further, rhino horns are being marketed through at least six virtual trading websites in Viet Nam; the "online" horns are described as authentic, but no locations are given and only mobile phone numbers are provided in terms of contact details (Turton, in prep.). Viet Nam has made at least eight seizures of rhino horns since 2003, including 11 horns at border crossings with Laos and nearly 50 kg of horn at the Ho Chi Minh City international airport (TRAFFIC Southeast Asia, *in litt.*, 2009).

In comparison, far less is known about current rhino horn trade dynamics in China, but Chinese nationals have been arrested in South Africa with illegal rhino horns and, since 2001, seven seizures of rhino horn have occurred in China (Z. Wan, *in litt.*, 2009). Further, seizures of rhino horns destined for China have been made in Switzerland and Hong Kong in 2001 and 2002, respectively (ETIS data, 2009). In terms of other trade routes, African rhino horns have been sent to Thailand, where two seizures have yielded four rhino horns since 2003, and the Philippines where two horns were seized in 2005 (ETIS data, 2009). Seizures of rhino horns made in Viet Nam in 2007 and 2008 had all been transported by air from South Africa through Singapore and Hong Kong (TRAFFIC Southeast Asia, *in litt.*, 2009). More recently, five horns seized in Kenya in 2009 coming from Mozambique were destined for Laos via Thailand, according to the documentation with the shipment (ETIS data, 2009).

2.4 Major conservation actions and field activities

Most rhinos currently are in areas where law enforcement effort is concentrated with the aim of making it more effective. The primary reason for the overall increase in rhino numbers since CoP14 continues to be investment in field conservation efforts, including protection, monitoring and translocations to maintain productivity of established populations and to create additional populations with good growth prospects. For example, a joint project undertaken by WWF and Ezemvelo-KZN-Wildlife continues to facilitate the creation of additional, potentially large, black rhino populations in KwaZulu-Natal, South Africa. This project has just entered its third phase and will now expand to start creating new rhino populations elsewhere in South Africa and possibly in neighbouring countries.

In Zimbabwe, in response to poaching or disturbance and land pressure issues in some areas, vulnerable rhinos have been caught and taken to safer locations. In 2009, for example, the last rhinos were moved from the Bubiana Conservancy (which at one stage was a ***Key 1***-rated population with over 100 animals). Elsewhere, snared animals continue to be darted and treated whenever detected. Training to support rhino

monitoring in some Zimbabwe populations, particularly those on State land, has occurred with a recent training course in 2009 funded by WWF.

In South Africa, there have been a number of initiatives and meetings since CoP14 to deal with the escalating poaching challenge. The formation of a National Biodiversity Investigators Forum (NBIF) in May 2009 has increased the national focus on rhino crimes, and should facilitate investigations across provincial boundaries and improve cooperation between wildlife personnel and Organised Crime Units of the South African Police. Intelligence gathering and cooperation between various law enforcement bodies continues to be critically important in southern Africa's fight against organised criminal gangs. Despite a number of regional events to enhance cross-border law enforcement collaboration and effectiveness, including regular meetings of the Rhino and Elephant Security Group, there are few instances of successful trans-national investigations to report since CoP14.

A manual to guide implementation of rhino conservation strategies in the Southern African Development Community (SADC) (http://www.rhinoresourcecenter.com/ref_files/1190402386.pdf) was published. Also, the IUCN/SSC AfRSG and AsRSG, in collaboration with the Wildlife Health Specialist Group and the Re-introduction Specialist Group, have produced new guidelines on the re-introduction and translocation of African and Asian rhinos (http://data.iucn.org/dbtw-wpd/edocs/SSC-OP-039.pdf).

2.5 Management plans and strategies

IUCN/SSC AfRSG recommends strategies for the successful conservation of African rhinos. Botswana, Kenya, Namibia, South Africa, Tanzania, Zambia and Zimbabwe have all developed national rhino strategies, with most following IUCN's recommendations using a logical framework approach. Since CoP14, Kenya has completed a revision of its rhino strategy and a number of other range States have been developing or revising their plans, including South Africa, Swaziland, Namibia and Zimbabwe. The success of any rhino conservation strategy depends upon the degree to which it is implemented in the field. Sufficient commitment and expenditure from range States, augmented by additional, targeted donor support, is needed to minimise illegal killing of rhinos (through protection and use of effective investigation and prosecution techniques) and to grow rhino numbers rapidly (using monitoring to guide biological management for growth). Conservation agencies often coordinate the roll-out of such plans through specialist committees that assist with the development of annual work plans. In some countries, Zimbabwe for example, poor implementation remains an issue of concern.

2.6 Coordination and implementation mechanisms

Rhino range States promote Africa-wide coordination through membership in the IUCN/SSC AfRSG. Regional coordination occurs through various forums and groups, including SADC's Rhino Management Group (SADC-RMG) and the Rhino and Elephant Security Group/Interpol Environmental Crime Working Group, which have regular meetings. In 2008, the SADC-RMG organised a meeting for private owners of black rhino whose representation in the group has increased. A phase two SADC Regional Programme for Rhino Conservation has been proposed, focusing on regional translocations and range expansion, but the SADC Secretariat (Food, Agriculture and Natural Resources section) has not actively pursued this matter and secured funding for the plan.

Since 2004, IUCN/SSC AfRSG meetings have repeatedly identified the need for an East African Community Rhino Management Group (EAC-RMG) to consolidate rhino conservation efforts in that region. At an inaugural meeting in May 2009, representatives from Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda attended, calling for a strategic and cooperative approach to the conservation and management of rhinos in east Africa. Currently, Kenya chairs the EAC-RMG and plans are underway to hold a workshop to develop a regional rhino conservation strategy.

2.7 Rhino horn stocks

Pursuant to *Decision 14.90*, TRAFFIC and IUCN helped develop the CITES reporting format for rhino horn stocks that was circulated through Notification to the Parties No. 2009/011 in March 2009. Submissions were subsequently received from: China, Germany, Japan, Namibia, New Zealand, South Africa, United Kingdom and Zimbabwe. TRAFFIC also directly received submissions from Botswana, Kenya, Swaziland and Zambia, and similar information for Malawi and Tanzania was collected at the IUCN/SSC AfRSG meeting in May 2008.

Within Africa, rhino horn stocks have grown from 19,850 kg in 2006 to 21,078 kg in 2008 (AfRSG, 2008), and now stand at 23,545 kg in nine rhino range States. Another 5,219 kg of rhino horns are held by five other CITES Parties. The total of 28.7 tonnes represents a minimum as no data are at hand for any Asian rhino

range States, many traditional end-use markets, such as the Republic of Korea, Taiwan (province of China), Viet Nam or Thailand, or most trophy hunting countries in Europe and North America. Overall, 92% of these rhino horn stocks are State-owned property, of which 83% was derived from natural or management-related mortalities and less than 10% comprises seizures. With respect to African rhino range States, in all cases where comparative data were available, the number and weight of rhino horns in government possession had increased and no apparent discrepancies were noted. Finally, rhino horn stocks have been safely maintained, marked and recorded in most rhino range States in Africa since 2006, but five small-scale rhino horn thefts from government stocks have occurred in Kenya, South Africa, Mozambique and Zimbabwe, according to official reports.

Within Africa, only about 9% of all reported rhino horn stocks are in private hands of which nearly three-quarters are held by individuals in South Africa. The data provided to the CITES Secretariat by South Africa, however, has only documented private stocks in four out of nine provinces. For the Free State, Mpumalanga, Eastern Cape, Northern Cape and Western Cape, which collectively hold 20% of the private sector rhinos, no data were available. Currently, more than 4,000 rhinos are on some 390 private properties in South Africa, and the rate of horn accumulation has been estimated to represent 2.15% of the population annually (Hall-Martin *et al*., in prep). It has been calculated that “at least 2,150 kg” of horn accumulated over the last four years, and possibly as much as “3,834.50 kg” of rhino horn is now in private hands in South Africa (Hall-Martin *et al*., in prep). Another estimate suggests there should be in the region of 4,750 kg of rhino horn in the private sector (R. Emslie, *in litt*, 2009). South Africa’s declaration of privately-owned rhino horn stocks to CITES in mid-2009 falls far short of these figures by as much as 70% (in some part because of the non-reporting by the five provinces).

Whilst the shortfall between reported and expected horn stocks does not confirm that illegal activity is widespread in South Africa’s private sector, it does strongly suggest that significant volumes of rhino horn still remain outside of the legal control system and are vulnerable to undocumented trade in the hands of unscrupulous individuals. That fact, and the failure of five provinces to report private horn stocks, indicates that implementation of South Africa’s control policy for rhino horns is inadequate at a time when illicit trade is escalating. In all South African provinces, legal ownership requires each individual horn to be registered under permit. A moratorium currently prohibits the sale of rhino horns in South Africa, and the export of horns is only likely to be granted to emigrants as ”personal effects” or as legal hunting trophies. There is evidence that undeclared rhino horns from private sector sources are regularly moving into illicit trade and this constitutes a serious law enforcement problem. Whilst it was previously reported that an audit of rhino horns in private possession was being conducted by the South African Police (Emslie *et. al*, 2007), the initial audit was incomplete. A recent and more comprehensive audit was also not adequate, requiring a standardized approach at the national level and inspections of all rhino properties. While investigations following these audits are ongoing, it is not clear whether any legal action will result. More knowledge and control over private sector rhinos and rhino horn stocks in South Africa is critically needed for rhino conservation.

2.8 Legislation and prosecutions

The Threatened or Protected Species (TOPS) regulations under the *South African National Environment and Biodiversity Management Act* came into force in February 2008. They require permits for any person to hunt, capture, kill, or cut-off parts from any rhino or to import, export or possess any rhino or rhino part. TOPS regulations require the registering of all horn stocks, but so far their implementation at the provincial level is variable and deficient in some respects. In August 2008, ”standing permits” in Limpopo province, which allowed white rhino hunts on certain properties without permits, were abolished. In February 2009, a moratorium prohibiting internal sales of rhino horns and derivatives in South Africa took effect to prevent sales from private owners to criminal elements. In July 2009, new standards for marking rhino horns and hunting white rhino were published, which require all trophies to be marked and micro-chipped, prohibit the export of trophies in hand luggage and limit individual hunters to one white rhino hunt per year. These regulations also require national approval before provincial hunting licences can be issued. Finally, new CITES regulations, which include provisions to cancel export permits once shipments leave the country so that their re-use is prevented, are expected to be approved by the end of 2009.

Since 2006, there have been at least ten successful prosecutions for rhino crimes in South Africa, with five more cases pending; penalties currently average about ten years imprisonment for rhino poaching and two years for illegal possession of rhino horn. Kenya has also reported six rhino crime cases since 2007, with two resulting in convictions and ten-year jail sentences. In Zimbabwe, however, rhino crimes rarely result in successful prosecution. An April 2009 assessment of 123 separate poaching incidents in Zimbabwe, involving the recorded killing or wounding of 156 rhinos since 2007, indicated that only 18 cases had resulted in arrests (TRAFFIC East/Southern Africa, *in litt*., 2009). Of the 41 people who were arrested, only six people from three separate cases were actually convicted, three of whom were foreign nationals from Zambia and

Angola who received 18-year prison terms. One Zimbabwean was sentenced to five years in prison, and two Zimbabweans were each given 12 months in jail. Overall, this represents a conviction rate of less than 3%. All other individuals were either acquitted, released on bail, subsequently absconded or otherwise evaded prosecution, including cases involving signed confessions, repeat offenders and individuals in possession of illegal firearms and rhino horns. Press reports have called into question the ability of Zimbabwe's judiciary to act prudently, as well as the performance of those involved with investigations and prosecutions (Anon., 2008). Allegations of high ranking government officials in illicit rhino horn trade have also been reported (Anon., 2009).

Many African rhino range States have mandated jail terms and hefty fines to serve as a deterrent to rhino crime. Prescribed fines with maximum amounts, however, often lose their value after a few years due to inflation or a failure to match changes in the real economic value of rhinos (i.e. live animal prices). It is important that, whenever possible, rhino criminals are charged and tried under those laws which carry the highest penalties. For example, prescribed penalties for rhino poaching in Mozambique currently remain lax and need to be addressed.

3. Asian Rhinos

3.1 Status and trends since CoP14

Current estimates of the number of Asian rhino species by range State are summarized in Table 4 with information provided at IUCN/SSC AsRSG meetings in south Asia and southeast Asia in September 2008 and March 2009, respectively.

Table 4: Estimated numbers of Asian rhino by country as at September 2009
(Trends since January 2007)

Species	**Greater One Horned**		**Lesser One Horned**				**Sumatran**			
Subspecies	*R.unicornis*	**Trend**	*R.s.sondaicus..*	*R.s.annsmiticus*	**Total**	**Trend**	*D.s.sumatrensis*	*D.s.harrissoni*	**Total**	**Trend**
India	**2,364**	Up								
Nepal	**435**	Stable/Up?								
Pakistan	**2?**	Unknown								
Indonesia			38-44		**38-44**	Stable/Down?	140-200?		**140-200?**	Stable?
Malaysia							0-70?	20-30	**20-100?**	Down
VietNam				0-5	**0-5**	Stable?				
Total	**2,800**	Up	38-44	0-5	**38-49**	Stable/Down?	140-270?	20-30	**160-300?**	Down

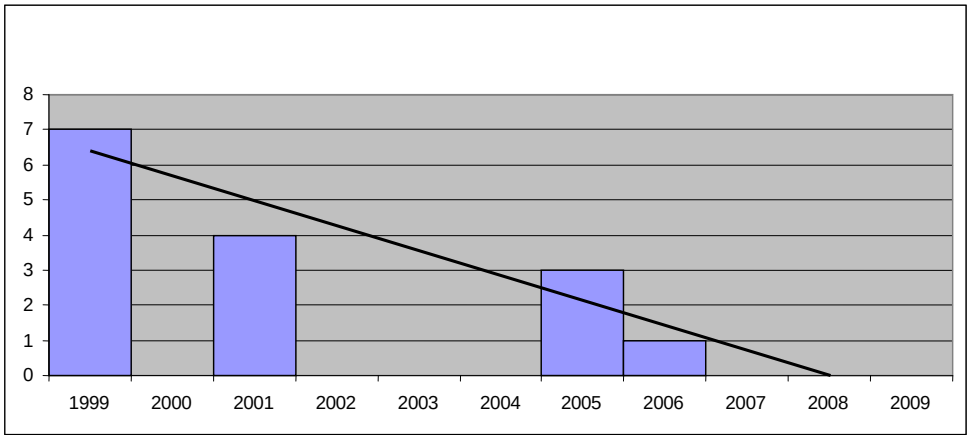
The **greater one-horned rhino** (*Rhinoceros unicornis*), now scattered in isolated populations primarily in the eastern part of its former range, is currently listed as Vulnerable on the IUCN Red List. In India, the four populations of Assam comprise the stronghold for the species (92.4%), with two other groups in West Bengal and one in Uttar Pradesh. Increasing numbers from 2006 to 2009 are due to the largest population at Kaziranga NP, which has grown by an average of 3.4% per annum and now holds 2,048 rhino. Elsewhere in Assam, numbers have stabilised at about 150 rhino in 2009, including a small re-introduced population and a slightly declining population impacted by poaching. From 2005 to 2008, rhinos in West Bengal increased by 2.8% per annum and totalled 139 in 2008. The small population in Uttar Pradesh (bordering Nepal) has grown by 6.7% per annum since 2004. Heavy poaching pressure in Bardia NP in Nepal has resulted in a few rhinos seeking sanctuary in adjacent Katerniaghat, India.

Nepal's greater one-horned rhinos have suffered due to recent socio-political unrest in the country, with current numbers down almost one-third from the 612 present in 2000. Rhino surveys in April 2008 found a total of 444 rhinos in three populations. Since then, poaching has reduced the population in Bardia NP from 31 to 22 (down from a peak of 80+ in 2000), decreasing the national total to 435. This still, however, represents a 5.3% increase in overall numbers since the CoP14 report as the larger and safer Chitwan NP population increased from 372 in 2005 to 408 in 2008, a 3.1% increase per annum,.

The **Javan rhino** (*Rhinoceros sondaicus*) is now only found in two populations and is Critically Endangered. Ujung Kulon NP in west Java, Indonesia currently conserves between 38-44 rhinos based on a 2008 census and is the only population of the subspecies *R. s. sondaicus*. Worryingly, this population has been relatively stable for many years but may now be in decline owing to overstocking and/or competition with Banteng, a wild bovine. This NP is also vulnerable to potential volcanic activity and tsunami destruction. On biological management and strategic grounds there is an urgent need to establish a second population of this Javan rhino subspecies as soon as possible. Action to improve the reproductive performance of rhinos remaining in Ujung Kulon is also needed.

A forest park in southern Viet Nam may hold the last five animals of another Javan rhino subspecies (*R. s. annsmiticus*), but the number of camera trap photos obtained in this area since 1999 has been steadily declining (Figure 8). With no reported sightings or photos over the last three years, the continued existence of this subspecies requires confirmation as the drop in photos may reflect a decline in search effort following closure of a conservation project in 2006 (P. Hartley, pers. comm., 2009). It was decided at the March 2009 AsRSG meeting that, with so few rhinos and their apparent failure to breed, any further attempt to manage this population as a separate "pure" subspecies should be abandoned. The habitat in the area is also reportedly of poor quality with little food for rhino and a low carrying capacity, a fact probably contributing to poor breeding. An adjacent forest area is probably more suitable for the species if any survive (P. Hartley, pers. comm., 2009).

Figure 8: Number of camera trap photos of Javan rhinos in Viet Nam per year



The **Sumatran rhino** (*Dicerorhinus sumatrensis*) is restricted to a few isolated populations in Malaysia and Indonesia, and is listed as Critically Endangered on the IUCN Red List. No confirmed records are available that indicate any Sumatran rhino remain in Myanmar, Thailand or Cambodia. Unlike south Asia and a number of African rhino range States, there has also been very limited government support for rhino conservation efforts in southeast Asia. Vast areas of suitable rhino habitat have been altered for palm oil cultivation and other development, leaving rhinos more vulnerable to poaching. In other cases, protected areas have also suffered encroachment.

The status of Sumatran rhino in Peninsular Malaysia is unclear and needs confirmation. In the 1980s, up to 130 rhinos were estimated to exist in Peninsular Malaysia, but recent studies between 2005 and 2008 suggest a significant decline, and government officials now estimate numbers to be 50 to 70 rhinos mostly occurring outside of protected areas**.** The last reported *bona fide* rhino sighting was possibly years ago, and it is not known if any rhinos have been photographed in camera traps that are periodically capturing tiger and elephant. Some conservationists believe the species may have gone extinct in Peninsular Malaysia in much the same way it did in Thailand - from neglect. If not extinct, the species only exists in isolated populations. More evidence is needed to justify the government estimate for Peninsular Malaysia. Elsewhere in Malaysia, the current population of the Sumatran rhino subspecies *D. s. harrissoni* in Sabah on Borneo is estimated at between 20 and 30 rhinos in two areas, with another location in south-western Sabah possibly holding a few more animals.

Sumatran rhino numbers in Indonesia are also unclear. Government sources indicate around 140-200 rhinos occurring in Way Kambas NP (20-30), Bukit Barisan Selatan (BBS) NP (60-80), Gunung Leuser NP (60-80) and probably Kerinci Seblat NP (~10), based on footprints encountered during anti-poaching patrols. In 2008, however, the Wildlife Conservation Society and the Rhino Foundation of Indonesia surveyed BBS and Way Kambas NPs using other methods which suggested substantially smaller rhino population estimates, and other observers believe that Kerinci Seblat NP no longer has a viable population. In the CoP14 report on rhinos, encroachment of significant areas in BBS NP was noted; since then, there have been similar reports of encroachment on the western side of Way Kambas NP, but government is apparently now engaged in efforts to evict illegal settlers from that area.

3.2 Illegal killing

The Sumatran rhino undoubtedly faces an opportunistic poaching threat in Malaysia and Indonesia, but data are not available on illegal off-take. No Javan rhino losses have been reported since 2002 but, with no sightings of the Viet Nam subspecies since 2007, undetected poaching is conceivable. In Asia, targeted poaching seems restricted to the greater one-horned rhino. In Nepal, between mid-1999 and mid-2007, more than 149 rhinos were reportedly poached, with losses severely affecting rhino numbers in Chitwan NP and Bardia NP, where 52% and 86%, respectively, of all detected mortalities were poached animals. While rhinos continue to decline in Bardia NP, Chitwan's numbers are now increasing following improved political stability. In India, most rhino poaching has occurred in Kaziranga NP, with 20 killed in 2007, 10 in 2008 and seven in 2009. These annual losses only constitute 0.35-1% of the population and the level of illegal off-take has not prevented continued growth. In Assam's Rajiv Gandhi Orang NP, 18 rhinos were killed from 2007 through October 2009, which worryingly represents over 25% of the population. Elsewhere in India, no rhino poaching has been reported.

3.3 Trade

Information on rhino horn trade was provided to the IUCN/SSC AsRSG by law enforcement personnel based upon interrogations of arrested poachers and traders. The major trade route for horns is from Assam to Kathmandu in Nepal, via Siliguri or Kakarbhita, and then on to Tibet. The ultimate destination for this horn is believed to be other markets in China. In March 2008, one rhino horn was seized from a Chinese man in Tibet following a routine inspection (Z. Wan, *in litt*., 2009). Only about one-tenth of Indian rhino horn moves to end-use destinations through the India-Myanmar border. This pattern is similar to what was reported at CoP14. The extent of horn usage and trade in consumer markets in China and other east and southeast Asian countries is not well known and further work is required to assess this important issue.

3.4 Major conservation actions and field activities

Just as in Africa, the greatest successes in Asia have occurred where there has been significant political will and dedicated staff commitment to undertake effective field conservation action. In India, anti-poaching and reintroductions into former range remain key components of rhino conservation. The first two rhinos have been moved to Manas NP under the *Indian Rhino Vision 2020* project mentioned in the CoP14 rhino report, but progress has been slow in the procurement of imported immobilising drugs due to bureaucratic delays. The next project phase is expected to resume in December 2009, with plans to translocate 18 more rhinos into Manas NP from Kaziranga NP and Pabitora Wildlife Sanctuary.

In Nepal, the National Trust for Nature Conservation (NTNC), in partnership with the Zoological Society of London, WWF-Nepal and others, has started an initiative to strengthen monitoring and anti-poaching capacity in the Department of National Parks and Wildlife Conservation assisted with funding from a U.K. Darwin Initiative Grant. Using similar approaches successfully employed in Africa (and with technical input from the AsRSG), this programme has developed standardised monitoring protocols, a modular training curriculum for instructors and field tools, including a "Scene of the Crime" training course under development for Nepal. Block monitoring programmes have also been introduced in Bardia NP and Chitwan NP, with data being stored in a systematic and standardised manner.

In Indonesia, a rapid assessment of potential habitats for a second population of Javan rhino have focused on the Guning Honje area near Ujung Kulon, where a small, closely-monitored, intensively managed fenced rhino area could be developed. Whilst Guning Honje is still at the planning stage, it does appear that a translocation exercise may finally occur. The government has constituted a Javan rhino task force to put this plan into action as part of its implementation of the Indonesian Rhino Conservation Strategy adopted in 2007.

Taman Negara NP is being given the highest priority for wildlife protection by the government in Malaysia. However, with no recent sightings or camera-trap photographs of Sumatran rhino in this park (or elsewhere in Peninsular Malaysia), confirmation of the species' presence with authentic evidence is required. In Sabah, the newly formed Borneo Rhino Alliance (BORA) is taking steps to strengthen Rhino Protection Units (RPUs) and increase monitoring of rhinos. Wildlife authorities in Sabah are planning to make a small, intensely-managed, fenced facility for isolated "doomed" Sumatran rhino to encourage breeding and facilitate monitoring and protection.

At Cat Loc in Viet Nam, human populations living in key rhino areas continue to destroy forest and the current status of patrolling and monitoring rhino in the area is unknown following the closure of a project in 2006 (P. Hartley, pers. comm., 2009). Prior to that, a village had been relocated from near a key rhino salt lick/wallow and a fence had been constructed to stop encroachment of domestic cattle.

3.5 Management plans and strategies

In 2006, the Nepalese government developed a greater one-horned rhinoceros conservation Action Plan for Nepal (2006-2011). India still does not have a national rhino strategy, as conservation is currently coordinated at the state level. There is an urgent need to develop a national plan in India to complement the efforts of state authorities in Assam, West Bengal and Uttar Pradesh. IUCN/SSC AsRSG is planning to work with the government to prepare such a plan in 2010.

In Malaysia, the Borneo Rhino Alliance (BORA) has initiated the Sabah Rhino Plan with a goal of preventing extinction of the Sumatran rhino in Sabah and then rebuilding numbers to viable levels through minimizing poaching and consolidating outlier rhino populations. In Indonesia, the government has produced the Indonesian Rhino Conservation Strategy and Action Plan 2007-2017 for both Javan and Sumatran rhinos. Its value will depend on the level of implementation but long-term goals call for increasing rhino numbers and creating a number of significant populations. Up to 30,000 km^2 of forest are earmarked in four to five national parks under the plan to secure the future of Sumatran rhino in Indonesia. For Javan rhino, the immediate action plan target is to increase numbers in the wild by creating a second population in suitable habitat. The AsRSG has also encouraged Viet Nam (including the directorate of Cat Tien NP) to prepare a Javan rhino action plan, but first there is a need to confirm that the subspecies is extant.

3.6 Coordination and implementation mechanisms

Since 2007, there have been three IUCN/SSC AsRSG meetings in south Asia (India and Nepal) and one in southeast Asia (Indonesia, Malaysia and Viet Nam). The *Indian Rhino Vision 2020* project is being undertaken by the Assam Forest Department with assistance from WWF-India and the International Rhino Foundation (IRF). Following the ending of SOS rhino operations in Sabah, in June 2008, the Sabah Wildlife Department, together with key rhino conservation allies including WWF-Malaysia, Institute for Tropical Biology and Conservation (University of Malaysia), Sabah and Leap Spiral, have formed BORA. Collaboration between Asian and African rhino field staff is also growing. Delegates from all major Asian rhino range States attended an IUCN/SSC workshop in Kenya to develop rhino translocation and re-introduction guidelines. The first Asian field personnel have also attended the annual dangerous drugs course in Malilangwe, Zimbabwe.

3.7 Horn stockpiles

Despite the CITES request for data pursuant to *Decision 4.88*, no rhino horn stock information was made available by any Asian range States for this report. In India, based on the Forest Department rhino horn stock registry, more than a 1,000 rhino horns have reportedly been deposited in various treasuries, of which more than 90 percent are in Assam. There, most rhino horn stock results from recoveries from natural mortalities, but about 10% of the horns derive from seizures. Through 2008, in West Bengal, 20 rhino horns were recovered from natural mortalities, whilst 13 rhino horns were seized. Rhino horn stocks in Nepal, Malaysia and Viet Nam are not known, but in Indonesia, a few horns are reportedly in government custody. Overall, there remains considerable room for improvement in the management and reporting of rhino horn stocks in Asia. The extent of rhino horn stocks in some previous horn consuming nations, including Thailand, is also unknown.

3.8 Legislation

The passage of the *Wildlife (Protection Assam Amendment) Bill, 2009*, as an amendment to the *Wildlife (Protection) Act, 1972* in Assam, in July 2009, has increased penalties for convictions of poaching ”Schedule 1 animals” which include rhinos. The previous three-year jail term in the original Act has been increased to seven years, and the seven-year sentence has been increased to ten years. The Bill also makes provision for life imprisonment for repeat offenders. Under this amendment, the fine for a first time offender has been doubled to INR 50,000 (USD1,800), but this amount still constitutes a fraction of the value of a rhino horn in an end-use market. In Nepal, stiff penalties for poaching continue to be applied. In December 2006, four rhino horn smugglers were sentenced to 14 years imprisonment and fined NPR 100,000 (USD1,360) each. Overall, most range States provide full protection to rhino species under their wildlife protection acts. Penalties stipulated in the legislation are generally high, but convictions are few and sentences often lenient. Capturing rhino poachers and traders, and collecting sufficient evidence for successful convictions, has proved to be very challenging.

4. Conclusions and Recommendations

With reference to Africa, poaching and trade-related summary statistics for the four most important rhino range States are given in Table 5. Zimbabwe's situation is the most grave as poaching numbers, rhino horn losses and poaching intensity have reached seriously high levels which are now causing the country's rhino population to decline. Law enforcement efforts to protect rhino in the field, and subsequent investigations, arrests and prosecutions of rhino crime in the courts are generally not meeting with success, raising a number of governance and capacity concerns. *Zimbabwe should, therefore, remain the leading priority in any future CITES review process that examines the implementation of Resolution Conf. 9.14*, keeping a focus upon monitoring rhino poaching and the status of law enforcement actions, including the investigation and prosecution of rhino crime.

Table 5: Indicators of rhino crime impacts in the four main African rhino range States

Description of indicator: / **Country**	**Poaching scale** No. of rhino losses to poaching, 2006-09	**Poaching intensity** Percentage of all detected mortalities due to poaching, 2006-09	**Impact of poaching** Percentage of December 2007 population poached during 2006-09	**Management response** Net number of horns lost to illegal markets (negative numbers) or recovered (positive numbers) through enforcement, 2006-09
Zimbabwe	235	81.2	26.1	-426
South Africa	210	15.1	1.2	-887
Kenya	17	15.8	1.9	-32
Namibia	0	0.0	0.0	+5

The situation in South Africa has also worsened significantly since CoP14. Unprecedented losses of rhino and rhino horns, an increasing poaching intensity, and an erosion in law enforcement effectiveness remain issues of serious concern. A number of positive measures to curtail abuses associated with sport hunting and the private ownership of rhinos are in progress, but implementation is incomplete and the full effects of some newer measures remain to be seen. Whilst the impact on national rhino numbers is still minimal, rhino horn trade developments in South Africa have been the principal driving force behind the resurgent rhino horn trade in Asia, most notably in Viet Nam and, to a lesser extent, China. Thus, ***South Africa is also a priority for CITES attention under Resolution Conf. 9.14***, especially with respect to improving coordinated information management at the national level on rhino numbers and stocks in the private sector, the occurrence and details of sales of rhinos, translocations and rhino hunting. Cross-border issues with Mozambique also need elevated attention, as that country often serves as a haven for rhino poachers who cross into South Africa and is a growing trade route for rhino horns to Asian markets.

Given the history of rhino horn trade in Africa, there is an inherent risk that the scale of poaching in southern Africa could quickly spread and affect other range States, especially as organised, well-financed and highly mobile criminal groups with direct linkages to Asian consumer countries are most heavily implicated in the illicit trade. For this reason, any signs of increased ***rhino poaching in Kenya or any other rhino range State need to be carefully monitored to support "early warning" and the ability to react with effective law enforcement responses. Further, increased efforts under Resolution Conf. 9.14 to promote cross-regional collaboration and contact between African and Asian law enforcement authorities are needed***.

In Asia, since CoP14, positive conservation efforts have been noted in India and Nepal where rhino numbers are increasing. Nepal, in particular, seems to have successfully addressed a serious poaching crisis that was reported to CITES CoP14. The main concerns in Asia now lie in Malaysia and in Viet Nam, where confirmatory evidence is needed to update the status of the Sumatran rhino in Peninsular Malaysia and the Javan rhino in Viet Nam, given the possibilities of local extinction at this time. In Indonesia, there is also an urgent need to create another secure wild population of Javan rhino using founder stock from Ujung Kulon NP (preferably following new IUCN re-introduction guidelines which advise against using a semi-captive approach), and to update Sumatran rhino numbers on Sumatra. ***Under Resolution Conf. 9.14, a report on the status of the rhino populations in Malaysia, Viet Nam and Indonesia would be welcomed at a future meeting of the Standing Committee.***

The resurgence of rhino horn trade in Viet Nam, possibly China and other parts of Asia is of paramount concern, but remains poorly documented, especially the extent of usage and trade in end-use markets in Asia. This issue needs to be carefully assessed, including a better understanding of the policies, legislation and law enforcement actions of end-use market governments, especially Viet Nam where internet trading of alleged rhino horns is currently taking place. Clarification should be sought from China regarding the status and purpose of importing so many live rhino in recent times. The continued involvement of Vietnamese and Chinese nationals in the acquisition of rhino horns within Africa also needs to be addressed from the standpoint of collective and collaborative law enforcement action involving authorities both in Africa and in Asia. ***Pursuant to Resolution Conf. 9.14, a report on the status of trade in rhino horn in Viet Nam and China and live rhino in China would also be welcomed at a future meeting of the Standing Committee.***

Continuing to monitor and track the accumulation of rhino horn stocks around the world under CITES has merit and should continue. ***All CITES Parties who have not already done so, should be encouraged to report rhino horn stocks under the Decision 14.90 process that is in progress, particularly those African rhino and Asian rhino range States where reports remain outstanding.***

Whilst some donor funding was secured for IUCN/SSC to cover the costs of holding African and Asian Rhino Specialist Group Meetings, to conduct a fact-finding mission to Zimbabwe and a follow-up training course, overall insufficient funding was forthcoming to cover the full costs of producing this report. Current funding arrangements are unsatisfactory and ***the issue of future funding for IUCN and TRAFFIC to continue to fulfil the mandate in Resolution Conf. 9.14 needs to be addressed***.

Acknowledgements and main sources of information

Much of the information on African rhinos in this document was supplied by rhino range States to the 9th meeting of the IUCN/SSC AfRSG in Tanzania in May 2008, which was sponsored by the U.S. Fish and Wildlife Service's Rhino and Tiger Conservation Fund and WWF. This report also includes responses received from CITES Parties pursuant to the Secretariat's Notification to the Parties No. 2009/011 of 20 March 2009 on "Stocks of rhinoceros horns and derivatives". In addition, Zimbabwe's Parks and Wildlife Management Authority collaborated with IUCN and TRAFFIC to provide information for this assessment, including an AfRSG mission in May 2009 to assess rhino monitoring and population estimates in selected parks; these efforts were sponsored by WWF and the International Rhino Foundation (IRF). TRAFFIC and AfRSG compiled further data and information on rhino poaching, seizures and trade from African rhino range States and other stakeholders for this document, including an assessment of South Africa funded by WWF and the Mackenzie Foundation. In addition, the IUCN/SSC AsRSG is grateful to IRF, WWF and Aaranyak for their support to hold its meetings in 2008 and 2009 and sponsoring the Assam Rhino Estimates 2009. Because very limited financial resources were available to support the production of this report, TRAFFIC was unable to engage in active data collection in any of the Asian rhino range States.

In terms of data completeness and quality, data concerning Mozambique primarily come from secondary, non-governmental sources, whilst data for Malawi, Tanzania and Uganda are incomplete for 2008 and outstanding for 2009. Finally, for all countries, the year 2009 obviously represents an incomplete information base and usually represents the first nine months of that year. As a result, the data in this report are suggestive of minimum values.

Simon Stuart, Jane Smart, Martin Brooks and Dena Cator at IUCN, and Steven Broad, Richard Thomas and Julie Gray at TRAFFIC are thanked for commenting on drafts and improving this document.

References

Anon. (2008). Poaching crisis as rhino horn demand booms in Asia. WWF, Gland, Switzerland

Anon. (2009). Ministers in illicit rhino horn trade. The Zimbabwe Standard, 11 July 2009. Harare, Zimbabwe.

Emslie, R.H,, Milledge, S., Brooks, M., van Strien, N.J. and Dublin, H.T. (2007). *African and Asian Rhinoceroses – Status, Conservation and Trade*. CoP14, Doc. 54. CITES Secretariat, Geneva, Switzerland.

Hall-Martin, A.J., du Toit, J.G., Hitchins, P.M. and Knight, M.H. (In prep). The 2008 Survey of White Rhinoceros, *Ceratotherium simum simum*, on Private Land in South Africa. WWF, Gland, Switzerland.

Milledge, S. (2007). *Rhino-related crimes in Africa: an overview of poaching, seizure and stockpile data for the period 2000-2005*. CoP14 Inf. 41. CITES Secretariat, Geneva, Switzerland.

Taylor, R.D. and Milliken, T. (In prep.). A Deadly Combination for Rhinos in South Africa: Government Lapses, Private Sector Greed and Asian Crime Syndicates. TRAFFIC East/Southern Africa, Harare, Zimbabwe.

Turton, C. (In prep.). Review of the Trade in Rhinoceros Horn in Viet Nam. TRAFFIC Southeast Asia, Hanoi, Viet Nam.