Population status of black and white rhinos in Zambia

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Abstract

Poaching was the primary cause of extermination of black rhinos in Zambia. From an estimated population of 12,000 individuals in the 1960s, the population declined to extinction by 1993. Reported incidences of spoors and unverified sightings of individuals continued to be reported to the Zambia Wildlife Authority but none of these reports was verified and the species was assumed to be locally exterminated by 1995. In 2003 a National Rhino Conservation Plan was formulated and in the same year, with the technical guidance of the Rhino Specialist Group and financial support of the Frankfurt Zoological Society a rhino reintroduction programme begun. To date there are 27 black rhinos with six births and four mortalities recorded. None of the mortalities were due to poaching. There are plans to continue the reintroduction programme in other national parks where the rhino existed by 1972 when most of the national parks were established. As the black rhino population was being established, the out-of-range white rhino was also introduced in Mosi oa Tunya National Park, where the population size was recorded to be seven and another pair was introduced in the newly established Lusaka National Park No. 20 in March 2011.

Keywords: black rhino, white rhino, reintroduction, North Luangwa, conservation plan

Résumé

Le braconnage a été la principale cause de l'extermination des rhinocéros noirs en Zambie. A partir d'une population estimée à 12.000 individus dans les années 1960, la population a diminué jusqu'à l'extinction en 1993. Les incidents d'empreintes et d'observations non vérifiées d'individus ont continué à être signalés au siège de l'Autorité de la Faune de Zambie à Chilanga, mais aucun de ces rapports n'a été vérifié et enfin en 1995 l'espèce était présumée être localement exterminée. En 2003, un plan national de conservation des rhinocéros a été formulé et dans la même année, avec les conseils techniques du Groupe de spécialistes du rhinocéros et le soutien financier de la Société zoologique de Francfort, un programme de réintroduction de rhinocéros a commencé. A ce jour il y a 27 rhinocéros noirs et on a enregistré six naissances et quatre mortalités. Aucune des mortalités n'était due au braconnage. On prévoit de poursuivre le programme de réintroduction dans d'autres parcs nationaux où les rhinocéros existaient à l'époque de la création des parcs nationaux, il y a environ 40 ans. Pendant que la reconstitution de la population des rhinocéros noirs se poursuivait, on introduisait également le rhinocéros blanc exogène dans le Parc national de Mosi oa Tunya, où l'on a enregistré une taille de population de sept individus et un autre couple a été introduit dans le nouveau parc national n020 de Lusaka en mars 2011.

Introduction

The black rhino population was exterminated in Zambia; in 2003, the National Rhino Conservation Plan provided a new vision for Zambia (Fig. 1) to revive its conservation efforts, which aimed to restore the black rhino population, which once roamed the country in the thousands. Reintroduction of this species would promote tourism and help restore the country's conservation image at regional and international levels.

Of the four recognized subspecies or ecotypes of black rhinos, Zambia had the savannah/bushveld group (*Diceros bicornis minor*) (Emslie & Brooks, 1999). The species occurred throughout Zambia,

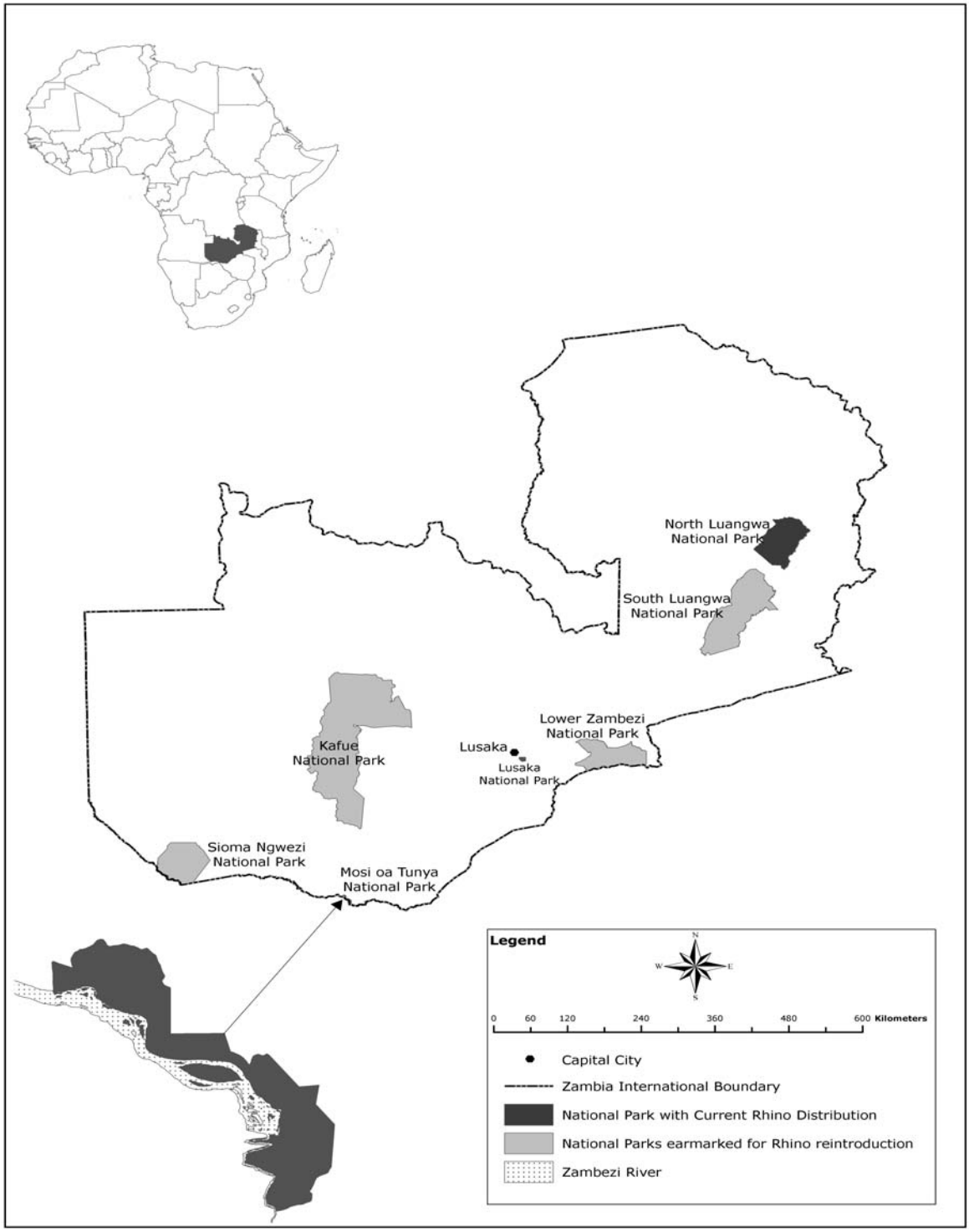

Figure 1. Location of the black and white rhino areas in Zambia including potential areas for additional re-introduction programs in the near future.

except within the Kalabo district of the western province and north-western province (Fig. 2). Prior to the 1960s rhinos were widely distributed in Zambia. The only areas of the country where the species was not recorded are: parts of north-western and western provinces, Mansa Game Management Area and the eastern highlands of the Mafinga and Makutu (Mitchell & Ansell, 1964; Ansell, 1966). By the 1980s the distribution had been reduced and the species was known to be largely restricted to protected areas such as the Luangwa Valley and scattered localities in the middle of the Zambezi Valley downstream of Lake Kariba (Kampamba & Chansa, 2005).

The national rhino population before the 1960s was estimated at 8,000–12,000 (Anon., 1982). By 1993 the population had declined and was considered to be exterminated by 1995. In the Luangwa Valley alone, which was also the country's stronghold, numbers were reduced from an estimated 4,000 in 1973 to fewer than 2,000 by 1979 (Anon., 1982) and declared locally exterminated by 1995. Emslie and Brooks (1999) recorded 2,750 in 1980, 1,650 in 1984, >106 in 1991, 40 in 1992 and locally exterminated by 1995.

Extinction of the black rhino

In general, the loss of rhinos in Zambia was caused by poaching (Leader–Williams, 1984, 1988 and 1990), exacerbated by the following factors: (i) high prices the rhino horn was fetching in the Middle East; (ii) civil and liberation wars in some of Zambia's neighbouring countries, which became and still are the major source of illegal firearms; (iii) large numbers of refugees and freedom fighters who acted as agents for illegal trade and supply of illegal firearms; (iv) general decline of the economy due to the fall in copper prices, which engendered an increase in unemployment and poverty levels that acted as a catalyst for people to engage in poaching activities; (v) inadequate government interventions and lack of political will to support the Department of National Parks and Wildlife Service in protecting wild populations; (vi) political patronage of those involved in the rhino horn trade and corruption within law enforcement agencies and other arms of government; (vii) inadequate trained manpower and low staff densities to adequately patrol the national parks and game management areas; (viii) inadequate information on the reproductive status and population growth of the species; and (ix) lack of a rhino management plan to guide the implementation of alternative strategies that would have ensured the survival of the species (Anon., 1982; Kampamba & Chansa, 2005).

This paper provides a succinct account of the status of the black rhino in Zambia from the pre-1960s, when the populations were high, to 1995 when the species was declared locally exterminated. It then provides an account of attempts made by Zambia Wildlife Authority (ZAWA) and its co-operating partners to reintroduce the species in part of its former range.

Attempts made to save rhinos in Zambia

In August 1987, an attempt was made to protect black rhinos through 'Project Rhino', which was created to establish safe sanctuaries in national parks such as South Luangwa, Kafue and Lochnivar—and on privately owned game ranches (NPWS, 1992). The project, supported by WWF, had the following objectives: (i) to capture the remaining black rhino 'outliers' and translocate them to safer sanctuaries with 24-hour tight security by armed wildlife police officers, and; (ii) to breed the animals in captivity.

The project was abandoned in 1989 owing to lack of finances and logistical problems. However, towards the beginning of 1991 the project was revived with the purchase of electrical fencing materials, but changes in policy shifted the project's focus. It was felt that an action plan should be formulated as a prerequisite to initiating the project. Between 1991 and 2002 the programme was intermittent.

In 2003 a founder population of five individuals was reintroduced in North Luangwa National Park after a project feasibility assessment was carried out in 2001 (Dunham, 2001) that recommended a founder population of 20 individuals. Additional individuals were secured to obtain the required minimum number of 20 founders (Table 1). Between June 2003 and May 2010 a total of 25 individuals, comprising 8 males and 17 females, were reintroduced. Six calves were born in the fenced sanctuary while 4 individuals died (Table 1); a total of 30 rhinos were in the sanctuary at the time of writing this paper in October 2011.

Table 1. Summary of the black rhinos released in North Luangwa National Park by October 2011, Zambia

Month & Year introduced	Source	Name of Individual	Sex	Estimated Age (years) when released	Date of Death	Cause of Death
June 2003	Kruger NP	Kanabesa	M	± 29	7 January 2009	Died of wounds sustained from intraspecific fights
June 2003	Makarele NP	Londokeni	M	± 20		
June 2003	Kruger NP	Twatemwa	F	≤ 20		
June 2003	Kruger NP	Natwange	F	≤ 20		
June 2003	Kruger NP	Mapalo	F	± 9		
June 2006	Eastern Cape	Chivwimbo	F	4	12 July 2006	Failure to adapt, psychological stress leading to anorexia
June 2006	Eastern Cape	Chikuse	F	4	10 March 2007	Failure to adapt, trypanosomosis
June 2006	Pilanesburg NP	Buntungwa	F	13		
June 2006	Eastern Cape	Twashuka	F	9		
June 2006	Eastern Cape	Kango	M	9		
June 2006	Pilanesburg	Kondobole	M	9		
June 2006	Kruger NP	Twikatane	F	6		
June 2006	Kruger NP	Subilo	M	16		
June 2006	Eastern Cape	Chilenje	F	8		
June 2006	Kruger NP	Julila	F	27		
June 2008	Kruger NP	Nalubuka	F	5	*30 July 2010	**Trypanosomosis
June 2008	Kruger NP	Bwacha	M	12		
June 2008	Kruger NP	Ichuma	M	10		
June 2008	Marakele NP	Mwine Mpanga	F	9		
June 2008	Kruger	Intanda	F	5		
May 2010	Umfolozi GR	Tamala	F	3		
May 2010	Hluhluwe GR	Mwaiseni	F	8		
May 2010	Ithala GR	Ithala	F	5		
May 2010	Umfolozi GR	Chengelo	F	22		
May 2010	Umfolozi GR	Bukwele	M	22		

Notes:
* could have died two weeks earlier, as the body had decomposed when it was found on 30 July 2010.
** The individual had earlier been treated for trypanosomosis using the drug berenil but did not show signs of improvement.

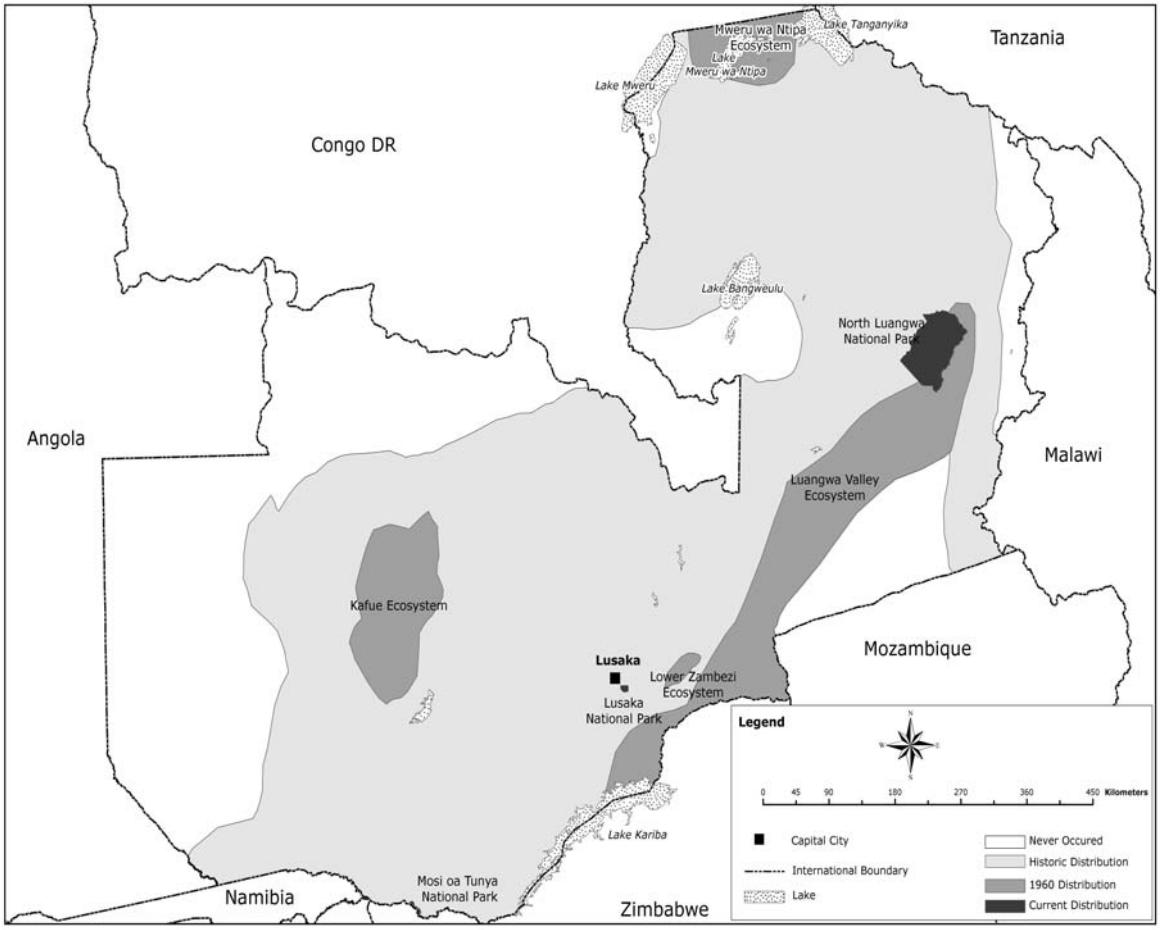

Figure 2. Distribution of black rhinos in Zambia up to 1960 (Source: Game and Fisheries Records 1960; Smithers, 1966).

Introduction of the out of range white rhino in Zambia

In 1964, the first out of range white rhino subpopulation, comprised of one male and two females, were introduced near the Victoria Falls area of Mosi oa Tunya National Park from South Africa. By 1981 the population had increased to 13. But by 1989 this population had been exterminated through poaching. In 1994, a second subpopulation of six, comprising two males and four females, was again introduced from South Africa in exchange for 24 sable antelopes. By 2008, only one male had remained and the rest were lost mainly through poaching, a drowning accident and failure to breed.

In 2008, one male and three females were brought in to supplement the only surviving individual. So far three calves have been recorded. The first was born November 2010 and was killed when the mother slept on it, the second was born in December 2010 and the third in January 2011, giving a total of seven (two adult bulls, three adult cows and two calves of unknown sex).

In March 2011, a pair of adult white rhinos was introduced from the Republic of South Africa into the Lusaka National Park , which was declared in 2011 and covers 4,000 ha in extent, which was, giving a national total population of 30 black rhinos and 9 white rhinos. The rhinos are currently in a holding pen and being provided with supplementary feed. The animals will be released to the wider area when the fence has been electrified. It is hoped that the two white rhino populations will be managed as meta-populations, which would also allow for the exchange of bulls

or, where feasible, genetic material to prevent inbreeding. In the long-term, Mosi ao Tunya National Park will be extended by incorporating Dambwa Forest Reserve, which will increase the feeding area for the rhinos. In Lusaka National Park, there would be need to secure additional land by way of purchase in order to accommodate the prospective increase in the rhino population.

Rhino conservation policy

In 2003 the Zambian government formulated a policy that facilitated the reintroduction programme. The policy also provides conditions for rhino security, ownership regimes, establishment of rhino protection areas, the management and security of horns, species and area-specific introductions, rhino hunting and capture for commercial sale, size and breeding potential of founder population and dehorning.

The vision and main goal of the policy were to secure a viable and protected population of the black rhino in its natural habitat of their former range and out of range white rhino populations. 'Viable' implies populations that are secure, breeding and managed as a metapopulation on the basis of the rhino's cultural, spiritual aesthetic and social economic value. Additionally, the policy aims to reintroduce rhinos and aspire to achieve an average growth rate for both black and out of range white rhino of at least 5% per annum over the next 10 years.

As the population grows, it is expected that there will be new challenges of obtaining additional financial support and increased manpower, particularly when the rhinos are released from the fenced sanctuary to the unfenced area of the North Luangwa National Park. So far, it can be concluded that the reintroduction of rhino in Zambia has been a success.

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