

# Challenges and Opportunities for Conserving Some Threatened Species in Kenya

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## Introduction

**KENYA HAS OVER 100 SPECIES THAT ARE LISTED AS “THREATENED.”** In addition, there are many more that are not globally listed but are nationally threatened. The challenges facing the conservation of most species are similar but there are some that are specific to individual species.

Habitat loss and fragmentation affect all species, whereas conflict between people and wildlife, and illegal offtake, affect only some. Reduced prey base affects carnivores, while ignorance and misconception affects hyenas and owls. Disease affects mainly wild dogs and Grevy’s zebra, while irresponsible tourism is a factor in the conservation of cheetahs and wild dogs.

This paper examines some species in Kenya, the conservation challenges they face, and efforts to enhance their conservation.

## Grevy’s zebra

Grevy’s zebra has undergone one of the most substantial reductions of range of African mammals, and is found today in only two range states: Kenya and Ethiopia. Historically, the species was also found in Eritrea, Djibouti, and Somalia, and, possibly, Sudan. The species has undergone significant decline, from an estimated 15,000 individuals in the late 1970s to a present-day estimate of 2,400 individuals, an 85% decline over a period of about 30 years (Figure 1). Table 1 shows the causes of population decline of the Grevy’s zebra.

As such, Kenya has an enormous national and global responsibility to ensure that this species is protected. This is particularly important because 95% of the current population of Grevy’s zebra is found in Kenya.

The sustained decline in numbers and range has been a major concern to stakeholders in Grevy’s zebra conservation. It was also recognized that the conservation of Grevy’s zebra and its semi-arid ecosystem in Kenya will require commitment and coordination among all stakeholders to ensure the future survival of this species.

The need for a Grevy’s zebra conservation strategy for Kenya was suggested in 2002. A meeting involving diverse stakeholders was held in March 2004 to map ways of developing a conservation and management strategy for the species. That meeting led to the formation

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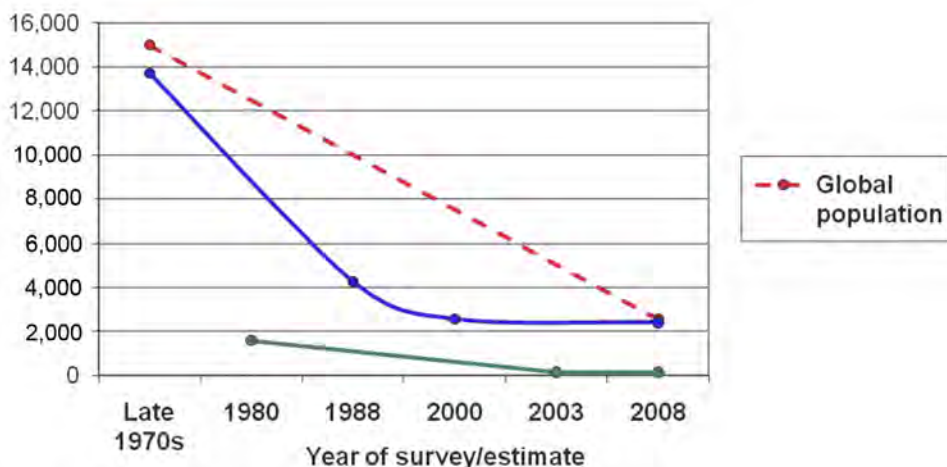


Figure 1. Trend in Grevy's zebra numbers from the late 1970s to 2008.

Threat	Cause	Threatened population(s)
Reduction of water sources	Unsustainable extraction of perennial river water for irrigation in highland areas.	All populations, particularly those dependent on River Ewaso Ng'iro. Affects 60–70% of Kenya's population.
Restricted access to water	Exclusion of wildlife from water sources by pastoral people.	The small and potentially isolated populations in the more arid areas.
Habitat degradation and loss	Heavy, sustained grazing by relatively high densities of domestic livestock.	All lowland populations in the historic range of Grevy's zebra.
Competition for resources	Competition with high densities of livestock for limited resources.	All lowland populations. Competition may result in low juvenile survival.
Hunting	Historically: killed for skins; currently, killed for meat, medicinal and cultural purposes.	The population in general.
Predation	Disproportionate predation, specifically by lions.	Protected areas where lions are abundant.
Disease	Endemic anthrax, particularly from unvaccinated livestock.	Populations in areas with a diffuse wildlife–livestock interface.
Inter-specific hybridization	Hybridization between Grevy's and plains zebra.	Ol Pejeta Conservancy and Tsavo.

Table 1. Summary of threats to Grevy's zebra in Kenya.

of a National Grevy's Zebra Task Force (GZTF), which was mandated to coordinate conservation efforts in Kenya. Since its inception, the National GZTF held several meetings under the direction of the Kenya Wildlife Service (KWS). In its meetings following the 2004 workshop, the task force decided that there was a need to develop a national Grevy's zebra conservation strategy.

As part of the strategy development process, in April 2010 a national workshop was held with all stakeholders to develop a vision, goals, and strategic conservation objectives.

The workshop provided an opportunity to update participants on numbers and distribution of Grevy's zebra in Kenya, as well as incorporate the inputs and views of stakeholders. Activities, indicators, and timelines were outlined against each strategic objective. Timelines for implementing the strategy and a draft implementation structure were also developed.

The strategy development process put emphasis on ensuring the participation of those taking conservation actions on the ground, particularly local communities who are the major stakeholder across the species' range.

The first species of wildlife actually known to have been eliminated by humans is the dodo. This was a bird species that occurred on the island of Mauritius in the Indian Ocean. It went extinct in 1681 due to indiscriminate killing by people. Since extinction is irreversible, we would not like the Grevy's Zebra to go the way of the dodo. The national conservation and management strategy will go a long way toward ensuring that Grevy's zebras are sustainably conserved and managed for the benefit of the people of Kenya and as a part of the world's wildlife heritage.

Grevy's zebra is listed in Appendix I of the Convention on International Trade of Endangered Species of Flora and Fauna (CITES). They are legally protected in Ethiopia and have been protected by a hunting ban in Kenya since 1977.

### **Large carnivores**

Kenya has six species of large carnivores, namely: lions, cheetahs, spotted hyenas, striped hyenas, wild dogs, and leopards.

Lions occur in a number of Kenya's protected areas, with large populations in the Masai Mara and the Tsavo complex. In addition, there are important lion populations outside protected areas in Laikipia, Kajiado, and Narok. Kenya's lion population is estimated at 2,000 individuals.

The cheetah (Figure 2) is one of the most unique and specialized members of the cat family. It can reach speeds of over 100km/hour making it the fastest creature on land. In the past, cheetahs were widely distributed within Kenya. However, cheetahs in Kenya appear to have experienced a reduction of their geographic range. Today, they occupy 23% of their historical range, mainly in the Tsavo, Mara-Serengeti and Laikipia-Samburu ecosystems. The national population is estimated at 1,160 individuals.

Spotted hyenas are hunters and scavengers, and occur in large numbers in most wildlife areas. Striped hyenas easily constitute the least well known of the six large carnivores native to Kenya. Despite superficial similarities, they differ from spotted hyenas in virtually every aspect of their biology. They are present in some protected areas, but the

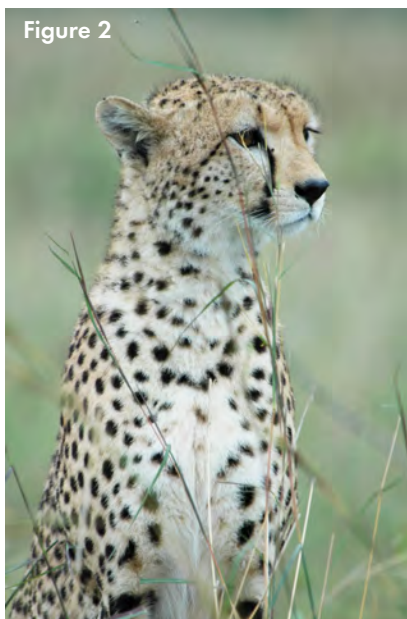


Figure 2

vast majority resides outside parks. The national population is estimated at 1,000 individuals.

Wild dogs were widely distributed across Kenya in the past but today occupy just 13% of their historical range. Despite this past decline, wild dog numbers have increased in Kenya in recent years. The largest population, occupying parts of Samburu, Laikipia, and Isiolo districts, colonized this area naturally in the late 1990s; for the preceding 15 years wild dogs had been absent from this area. Likewise, sighting frequencies from the Tsavo ecosystem have increased relative to those in the early 1990s. Wild dogs are also gradually increasing in number and recolonizing the Mara–Serengeti ecosystem following a die-off in 1990–1991. The national population of wild dogs is estimated at approximately 845 individuals.

Leopards remain widespread both inside and outside protected areas, although quantitative data on their numbers and distribution are sparse.

Kenya's large carnivores have an important function in structuring ecological communities and also play a critical role in Kenya's tourism industry. However, the populations of these large carnivores have been on the decline in recent years. The key threats facing large carnivores in Kenya are:

- Habitat loss due to land use changes and human encroachment into areas that were previously occupied by wildlife.
- Human–carnivore conflict: These species are threatened directly and indirectly when they are killed due to threats on humans and livestock.
- Loss or decline of populations of prey species.
- Myths: Carnivores such as hyenas are portrayed in a negative light in Western art and literature, mocked and derided by Hollywood producers, and feared and disliked by many African communities. This dark public image currently represents one of the most serious obstacles to the conservation of hyenas.

The decline in large carnivore numbers and distribution has been a major concern to stakeholders in large carnivore conservation.

The need for national strategies to guide efforts to conserve large carnivores was suggested in 2000 and a National Large Carnivore Task Force constituted to champion the process. The strategies development process put emphasis on ensuring the participation of stakeholders. As part of the strategies development process, national workshops were held with stakeholders. The workshops provided opportunities to update numbers and distribution of large carnivores in Kenya.

The strategy has three critical objectives: achieve viable and functional populations of the carnivores themselves, achieve viable and functional populations of prey species, and eliminate or at least limit the proportion of livestock killed by large carnivores.

Some parts of Kenya can and do support reasonable densities of large carnivores. However, in other areas the presence of large carnivores is incompatible with existing land uses. Given that large carnivores live both inside and outside government-designated protected areas, the populations inside protected areas are almost certainly dependent on adjoining unprotected lands for their long-term viability. Hence, conservation activities outside pro-

tected areas are absolutely critical. Measures such as the designation of carnivore conservation zones on private and community lands are therefore likely to make a substantial contribution. The conservation strategies provide guidance on how this can be attained.

Despite their declining numbers, large carnivores are a serious threat to livestock, taking cattle as well as smaller stock. In Laikipia, for instance, lions are the most important predator of livestock on commercial ranches. Outside protected areas, the negative impact of large carnivores on human livelihoods may be reduced by limiting livestock losses. But a complementary approach is to offset those losses against gains from alternative income sources. An existing source of such alternative income is ecotourism: large carnivores are crucial to wildlife-based tourism, with virtually all tourists wishing to see lions, leopards, and cheetahs, and a high proportion of experienced tourists keen to see wild dogs.

Fostering efforts and developing mechanisms to help local people realize these potential benefits from the presence of large carnivores are a key prescription of the carnivore conservation strategies.

The strategies also call for the development of well-trained, efficient, and responsive Problem-Animal Control Teams within KWS as an important step in assisting local communities to reduce losses occasioned by large carnivores. Such teams have an important educational responsibility, teaching local communities about better and appropriate livestock husbandry practices and other measures that would reduce the vulnerability of livestock to depredation.

The conservation of large carnivores also entails maintaining the interactions between the carnivore species, and between the carnivores and their prey.

Overall, by carefully examining the needs of each of the species, the strategies seek to develop and implement approaches to promote co-existence of large carnivores with people and livestock.

### **Antelopes (hirola, bongo, sable, roan, and sitatunga)**

Hirola has had a restricted range in recent history, although fossil records indicate it had once a pan-African distribution. The species range in Kenya has declined from about 17,900 km<sup>2</sup> in the 1960s to approximately 7,600 km<sup>2</sup> by 1996, and the population has declined from roughly 14,000 animals in the 1970s to between 600 and 2,000 today. A national census held in January 2011 sighted 245 individuals in the natural range. The species is classified as a critically endangered.

The process to develop a Hirola Conservation Strategy was initiated in 1996, and was developed by a large number of institutions and stakeholder groups. The key aim of the strategy is to eliminate poaching, the greatest threat to the survival of the species, in order to allow the remaining populations to grow to viable levels.

Considering the fact that over 90% of the hirola population occurs outside protected areas, efforts have been directed toward the protection and management of the whole range through community hirola management systems, including sanctuaries. The first community hirola sanctuary, covering an area of approximately 20,000 acres, has been established.

The roan antelope was once widely distributed through the savannah woodlands of Africa, but its populations have rapidly declined during the last 40 years throughout much

of its range. The roan originally occupied fairly large areas of southern Kenya, but by the early 1960s the distribution had become much reduced, and the species was declining further in most of the scattered localities in which it persisted. There have been no confirmed reports of roan sightings in all areas of its former range in the last decade, and the last known refuge of the species in Kenya is the Lambwe Valley in Ruma National Park. This population has declined from 202 individuals in 1976 to about 27 individuals currently.

The decline in numbers and shrinkage in distribution of roan antelopes in Kenya has necessitated the development of a national conservation and management strategy. The strategy explores all the options that are available to ensure the species recovers and thrives in perpetuity.

The sitatunga is Africa's only true aquatic antelope, and Kenya is the eastern range of this rare animal. The antelope has continuously suffered loss of habitat and illegal hunting, bringing its population to the verge of regional extinction.

Today, the sitatunga is only found in a few localities. A recent survey confirmed 256 individuals in swamps in different parts of the country. The majority of sitatunga live outside government-designated protected areas and are now facing enormous threats to their survival due to the immense anthropogenic pressure exerted on their habitats. It's only through active intervention that the antelope will be saved from an eminent regional extinction. A task force on sitatunga conservation is currently working on a national conservation strategy.

Sable antelopes have been eliminated from large areas of their former range due to a combination of factors, including disease, drought-caused food shortages, habitat loss and degradation, and interspecies competition. Subsistence hunting poses an additional threat, and its powerful stature and imposing horns have also made this species a prized trophy animal to many big-game hunters.

In Kenya, the sable antelope has declined considerably in its former range in the last 30 years and is only found in Shimba Hills National Reserve. Currently, the population is estimated at 70 individuals, down from 265 in 1960. The population is dwindling and localized. KWS has established a task force to develop a national conservation strategy for the species.

The mountain bongo is on the edge of extinction in the wild mainly due to widespread destruction of forest habitats in Kenya. Kenya hosts the entire global wild population of bongos, estimated at 103 individuals. Aberdare National Park and Forest Reserve is the stronghold for bongos in the country, with an estimated population of 50 individuals. Mau West Forest holds an estimated 30 individuals, Mount Kenya Forest about 15, and Mau Eburru Forest 9. There is also another herd of 68 individuals in a semi-captive facility on the slopes of Mount Kenya. Aberdare National Park has branded the mountain bongo on the park's emblem. It is also a flagship species for indigenous forest conservation.

The mountain bongo is now one of the most threatened antelopes in Kenya. A major initiative is required to accelerate the surveillance program and to strengthen security measures in Kenya's forest ecosystems. A draft national conservation and management strategy has been developed and an official launch is planned during the course of 2012.

## Sea turtles

Five species of sea turtles are found in Kenya: the green turtle (*Chelonia mydas*), hawksbill



turtle (*Eretmochelys imbricata*), olive ridley turtle (*Lepidochelys olivacea*), loggerhead (*Caretta caretta*), and leatherback (*Dermochelys coriacea*). The first three live and forage in Kenya, while the last two use Kenya's waters as migratory routes and foraging grounds.

Illegal harvesting of sea turtles for meat, oil, and eggs are a major threat to the species. Degradation of sea turtle habitats is also a major threat. The most exploited species include the green turtle, olive ridley, and hawksbill. Sea turtles face their most critical threat from fisheries through incidental capture in set gillnets and trawl nets. This fishing gear causes either drowning through entanglement, or else the turtles are opportunistically harvested by the fishermen. Other threats include loss and degradation of nesting and foraging grounds from coastal developments, pollution from land-based sources, marine debris, oil spills, oil and gas exploration, predation of hatchlings and juveniles, diseases, and emerging threats related to climate change.

Due to their unique ecology and migratory nature, the myriad of threats sea turtles face has led to drastic global population declines. Two of the species utilizing Kenya's territorial waters are listed as "critically endangered," while three are listed as "endangered." The hawksbill and leatherback are listed as "critically endangered" whereas the green, loggerhead, and olive ridley are listed as "endangered."

Effective management and recovery of Kenya's sea turtle populations will be achieved through implementation of the national sea turtle conservation and management strategy, which was officially launched in 2011. The tools for implementing this strategy include stakeholder engagement, advocacy, communication, education, public awareness, targeted research and monitoring, and threat mitigation. The strategy has been translated into Swahili for use by coastal communities.

### Dugongs (sea cows)

Dugongs live in shallow, warm waters that are sheltered by bays and lagoons, and primarily feed on seagrasses. The dugong is the only marine mammal that is entirely herbivorous, and can move 500–600 km in a day. Individuals can live up to 70 years. The conservation challenges of dugongs are due to their long lifespan and slow breeding, their reliance on coastal habitats, the restricted coastal habitats subject to large diebacks, and the fact that they move across jurisdictions at local and regional scales.

The number of dugongs in Kenya was estimated to be 500 in 1967, dropping to 10 in 1994 and then to 6 individuals in 1996. Dugongs are globally listed as "vulnerable" by IUCN, the International Union for the Conservation of Nature. The threats to dugongs are offtake for meat and oil, illegal trade, coastal development, and sensitivity to disturbance by the operation of motorboats and other human activities. Kenya is in the process of constituting a national task force for the conservation of dugong.

### Primates

Kenya has a total of about 13 primate species, and harbors some of the world's most endangered ones. These are the Tana River red colobus (*Procolobus rufomitratus*) and Tana River mangabey (*Cercocebus galeritus galeritus*), both endemic to the lower Tana River forest.

Habitat loss and fragmentation is the greatest threat to primates in Kenya. As the human population continues to grow, primates are pushed into small isolated forest patches, minimizing their chance of survival. Increased interaction with humans is exacerbating the problem of human–nonhuman primate conflict. In addition, unpredictable weather patterns have altered temporal and spatial distribution and availability of food resources, further threatening the survival of these primates.

KWS is in the process of establishing a task force that will steer the process of developing recovery strategies for the threatened primates and management guidelines for the relatively common species.

## Giraffe

To many people, giraffes may not seem to be in need of focused conservation attention. However, they are facing increasing pressures that have affected their numbers and distribution in Kenya and elsewhere across the continent. Nine subspecies of giraffes natural occur in the African continent. Kenya is the only country with three of these subspecies present. Other countries have either one or two subspecies. Therefore, Kenya is the epicenter for giraffe speciation.

The number of giraffes in Africa has declined by 30% over the last decade as a direct result of habitat encroachment, habitat loss, habitat fragmentation, severe poaching, increasing human populations, and human–wildlife conflicts.

The Rothschild's giraffe (*Giraffa camelopardalis rothschildi*) is the second most endangered giraffe subspecies, with less than 670 individuals remaining in the wild, 60% of which are in Kenya. Once wide-ranging across western Kenya, Uganda, and southern Sudan, it has been almost totally eliminated from most of its former range and now only survives in a few small, isolated populations in Kenya and Uganda.

In Kenya, all known wild populations of the Rothschild's giraffe outside protected areas have been extirpated by agricultural development, so remnants are confined to national parks, private protected properties, and other protected areas where they have been translocated.

Reticulated giraffe (*Giraffa camelopardalis reticulata*; Figure 3) is found in northern Kenya and in Somalia, with a population estimated at 3,000–5,000 individuals remaining in the wild.

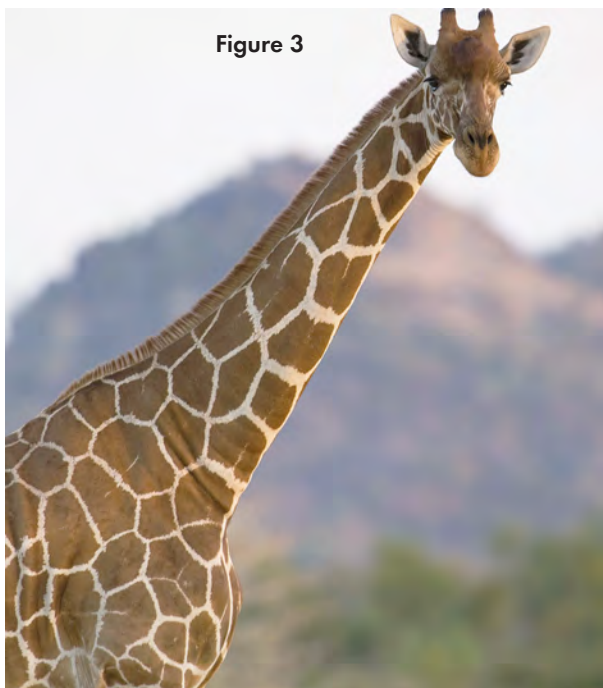


Figure 3



This estimate represents a small fraction of the 28,000 reported to have existed only a decade ago, suggesting that the subspecies has recently suffered a major and rapid decline giving rise to concern about its long-term survival.

Masai giraffe (*Giraffa camelopardalis tippelskirchi*) occur in southern Kenya, i.e., Amboseli, Tsavo, and the Masai Mara ecosystems, and throughout Tanzania. The Masai giraffe has relatively stable populations compared with the other subspecies, although concerns over their declining numbers have been raised. Results of current surveys and recent estimates are being compiled.

Kenya is the first country in Africa to produce a national conservation strategy for giraffes in the continent—a product of the National Giraffe Conservation Task Force that was constituted by KWS. The guidelines define the role of the government, conservation partners, and other stakeholders while raising awareness about the plight of giraffes and highlighting the generally declining population trends occurring within the country.

### Synthesis

The challenges facing the conservation of species in Kenya are enormous and complex. Kenya alone cannot address these matters. We believe the international community has a role to play in ensuring sufficient support for the protection, conservation, and management processes needed to maintain healthy and viable populations of these species.

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