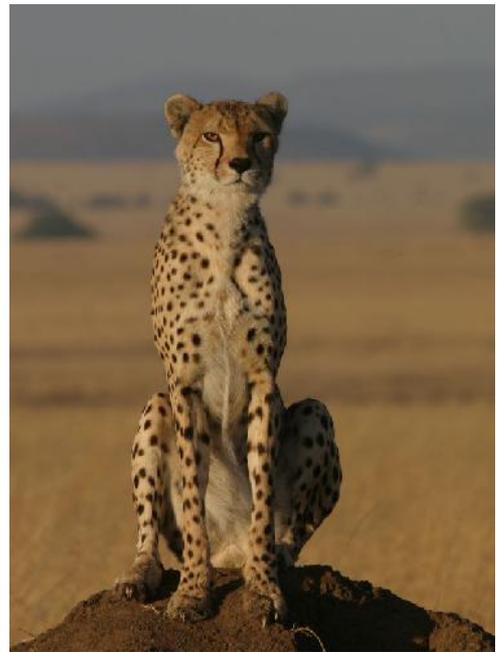
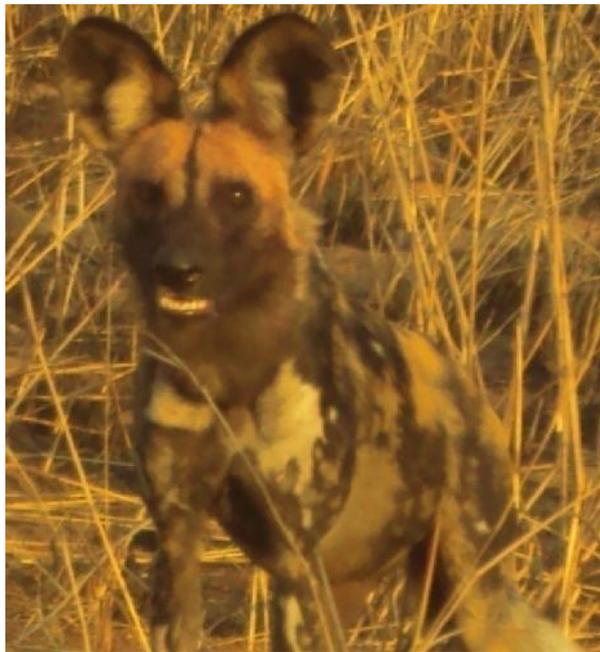


National Conservation Action Plan for Cheetah and African Wild Dog in Malawi.

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Suggested citation: Department of National Parks and Wildlife, Malawi (2011) *National Conservation Action Plan for cheetahs and wild dog in Malawi*



Welcome speech

This is an important occasion for the Department of National Parks and Wildlife of Malawi (DNPW – Malawi) and I appeal to you all that we take it as such. A reading of the history of wildlife conservation in Malawi shows that we are well endowed with wildlife. Liwonde and Lengwe national parks were hunting areas before they were proclaimed as national parks as most of the colonial administrators of the country spent much of the leisure time hunting in these two areas. But as you know, sportsmen always like to preserve their sport for the future, so although they hunted they came to realise the need to protect the wildlife. If you read the account of Rodney Wood, he went hunting and killed two nyala with one bullet. But when he looked at the two animals he decided that Lengwe needed to be declared as a protected area. It occurred to him that conservation was more important than hunting.

Conservation records show that cheetah and wild dogs did occur in many areas of Malawi. However, due to unsustainable hunting, human population increase, agricultural and other activities and instances of zoonotic diseases, cheetahs and wild dogs began to decline. There were still populations remaining in Kasungu in the 1980's. These however, have disappeared with the growing human population and other threats to habitat (poaching, encroachment, famine). Because of these activities, the populations of cheetahs and wild dogs progressively reduced and the cheetah completely disappeared from Kasungu National Park, and hence the whole of Malawi. I do hope that the problems that Kasungu faces will be resolved in time. Right now there are close to 2-3000 people living in the National Park, mostly on the Zambian side. We pray that the two brotherly countries quickly resolve this problem. It has become Kasungu's biggest problem. The existence of people in the park means that land is converted to agriculture, poaching occurs and settlement expands. In October 2010, the Park tried to forcibly remove the encroachers, but unfortunately this did not go down well politically. The two governments felt that the DNPW-Malawi was too heavy handed and didn't engage the stakeholders. This has resulted in settlers staying where they are. A new deadline of 30 September 2011 has been set for encroachers to move out of the park. We hope and pray that it will be respected. The Department believes that Kasungu and other areas in Malawi still have suitable habitat for cheetahs and wild dogs. They are happy to report that wild dogs are back in Kasungu and that they will settle permanently. I personally ran into 9 dogs on the Lifupa Lasita entrance road. It was a very beautiful and cherished time of my life as the last time I saw wild dogs was in the early 1980's.

The effort we are making today to strategise around cheetah and wild dogs will bring back the glory of yesteryear. DNPW - Malawi was a proud conservation department and we need to rekindle that. The reintroduction will not be easy, it requires financial and material resources. But also needs DNPW's full commitment, every member of staff will need to dedicate themselves to do their best if we are to be successful. Money and materials may be available, we have people willing to work with us, but these alone do not provide a solution. The human and professional commitment of the department will turn the wheels of success. We must regard ourselves as the engine of this success. What we achieve today and tomorrow will determine whether a dream will be transformed into a successful programme for this department. Therefore I appeal to all to actively participate and bring forth the necessary strategies for cheetahs and wild dogs in Malawi.

I would like to thank Dr Gianetta (Netty) Purchase for the time, effort and fundraising for the workshop. The fact that people have committed such resources speaks volumes for wildlife conservation in Malawi. It shows that we have friends and colleagues who are willing to assist and partner with us. It is perhaps a good sigh that soon after Netty visited last year to discuss Malawi

joining the regional programme and holding a workshop that the wild dogs arrived in Kasungu on their own! I hope that the cheetahs will come too and I believe that one or two may still be hiding somewhere. But if all cheetahs are gone, then it is upon us to work hard to bring them back. We think of Nyika, Liwonde and Lengwe, that have suitable habitat, but most importantly they need suitable prey. Thus need to work hard to protect prey in Malawi's parks.

Would like to thank the Wildlife and Environment Society of Malawi and Mr Paul Taylor, who have been very dedicated to conservation in Malawi. The organisation has been a good friend to the Department and the relationship is cherished. I do expect more stakeholders to join us later in the programme, those who are not able to attend this workshop.

Would like to thank the Endangered Wildlife Trust for taking the time and effort to join us, knowing that it is not always easy to do so. It shows their commitment to helping Malawi conserve its wildlife.

I would also like to thank all my colleagues from within the Department for attending and demonstrating their commitment to cheetah and wild dog conservation. It is important that we restore these two species.

With these few words I would like to declare the workshop open.

Mr L Sefu
Director, Parks and Wildlife
Ministry of Tourism, Wildlife and Culture.
May 30th 2011
Lifupa Lodge
Kasungu National Park

1. Introduction

1.1 Background

The African wild dog (*Lycaon pictus*) and the cheetah (*Acinonyx jubatus*) present major challenges for conservationists in the 21st Century. Both species were formerly widely distributed in Africa, but both have experienced dramatic reductions in numbers and geographic range in recent decades (Ray, Hunter & Zigouris, 2005). All large carnivores need large areas to survive; yet wild dogs and cheetahs range more widely, and hence need larger areas, than almost any other terrestrial carnivore species anywhere in the world. As human populations encroach on Africa's last wild areas, wild dogs and cheetahs – particularly susceptible to the destruction and fragmentation of habitat – are often the first species to disappear.

Despite their globally threatened status (wild dogs are listed as endangered and cheetahs as vulnerable (IUCN, 2006a)), their ecological importance as top carnivores (Woodroffe & Ginsberg, 2005b), and their value to Africa's tourism industry (Lindsey et al., 2007), to date remarkably little conservation action has been implemented for these two species. The majority of Africa's protected areas are too small to conserve viable populations, and active conservation efforts on unprotected lands have hitherto been restricted to a handful of projects. Three factors have hindered conservation activity for cheetahs and wild dogs:

1. The species' massive area requirements mean that conservation planning is needed on a daunting spatial scale, rarely seen before in terrestrial conservation.
2. Information is lacking on the species' distribution and status, and on the tools most likely to achieve effective conservation.
3. Capacity to conserve these species is lacking in most African countries; expertise in managing more high-profile species such as elephants and rhinos may not be transferable to wild dogs or cheetahs because the threats and conservation challenges are likely to be different.

Against this background, conservation issues associated with wild dogs and cheetahs are being addressed together because, despite being taxonomically quite different, the two species are ecologically very similar and hence face very similar threats.

1.3 National planning within a rangewide context

This national action plan for the conservation of cheetahs and wild dogs in Malawi was developed as part of a Rangewide Conservation Planning Process for these two species. Recognising the serious conservation issues facing cheetahs and wild dogs, in 2007 the Cat and Canid Specialist Groups of the IUCN/SSC, in partnership with the Wildlife Conservation Society (WCS) and the Zoological Society of London (ZSL) initiated a process to plan for the species' conservation across their combined geographic range. This process, conducted in close partnership with government conservation authorities, aims to develop a coordinated array of national conservation action plans for all range states, nested within broader regional strategies.

The Rangewide Conservation Planning Process has six stated objectives:

- To foster appreciation for the need to conserve wild dogs and cheetahs, particularly among conservation practitioners in range states.

- To collate information on wild dog and cheetah distribution and abundance on an ongoing basis, in order to direct conservation efforts and to evaluate the success or failure of these efforts in future years
 - To identify key sites for the conservation of wild dogs and cheetahs, including corridors connecting important conservation areas
 - To prepare specific global, regional and national conservation action plans for both cheetahs and wild dogs
 - To encourage policymakers to incorporate wild dogs' and cheetahs' conservation requirements into land use planning at both national and regional scales
- To develop local capacity to conserve cheetahs and wild dogs by sharing knowledge on effective tools for planning and implementing conservation action
- To foster collaborative management and conservation of these species amongst range states, particularly in the case of transboundary populations

A key component of this process is a series of workshops, bringing together specialists on the species' biology with conservation managers from governmental and non-governmental conservation organisations. Close involvement of government representatives was considered absolutely critical since these are the organisations with the authority to implement any recommendations at the management and policy levels. While the process will eventually cover the entire geographic range of both species, the large number of range states involved means that productive discussion and interchange would be very difficult to achieve at a single workshop covering all regions. Workshops are therefore conducted at the regional level, covering eastern, southern, and west-central Africa for cheetahs and wild dogs together.

Although the species' extensive area requirements demand conservation planning on a very large spatial scale, wildlife conservation policy is formulated, authorised and enforced at the national level. It is critical, therefore, that conservation planning be enacted at this level, and national workshops were considered a vital component of the rangewide process. Each regional workshop is therefore being followed immediately by a national workshop in the host country. Hence, the southern African regional workshop was followed by a Botswana national workshop. As well as providing an opportunity to develop a national conservation action plan for the two species, this workshop allowed delegates from other countries in the region (invited to attend as observers) to acquire the experience needed to prepare national workshops in their own range states. This process will eventually lead to the development of national action plans for all range states.

1.3 National action planning workshop in Malawi

A national action planning workshop for Malawi was held from 30th to 31st May 2011 in Kasungu National Park, Malawi. At the workshop, a total of 22 participants evaluated data on the status, distribution and threats to cheetah and wild dog in Malawi and reviewed range maps developed at the regional planning workshop held in Botswana in 2007. The participants then translated the vision, goal, objectives, targets and actions incorporated in the regional strategy into a National Conservation Action Plan for Malawi. During this process each level was debated in a fully participatory manner and adapted to enable effective conservation of cheetah and African wild dog in Malawi. The National Action Conservation action plan is described in detail below. A logframe of the plan is also included as an appendix to this report.



Figure 1.1. Participants of the Malawi National Action Planning workshop for cheetah and wild dog conservation held in Kasungu National Park, Malawi in May 2011. Mr Sefu (Director of the Department of National Parks and Wildlife) is seated fourth from the right.

2. Background information:

2.1 Conservation biology of cheetah and wild dog.

Cheetah:

The cheetah is a unique and specialised member of the cat family. While running down its prey, it can reach speeds of 64 miles per hour (103 km per hour, Sharp, 1997), making it the fastest creature on land. However, despite their specialised hunting strategy, cheetah are habitat generalists, ranging across a wide variety of habitats, from desert through grassland savannas to thick bush (Myers, 1975).

Cheetah have a social system unlike that of any other cat species. Cheetah females are tolerant of other females, and do not maintain territories, having large overlapping home ranges instead (Caro, 1994). Females are highly promiscuous, with high levels of multiple paternity within litters and no evidence of mate fidelity (Gottelli *et al.*, 2007). Cheetah males are often social, forming permanent coalitions of two or three, usually brothers, which stay together for life (Caro & Durant, 1991). Males in groups are more likely than single males to take and retain territories, which they defend against male intruders (Caro & Collins, 1987). In the Serengeti ecosystem in northern Tanzania, male territories average 50km², whilst females and males without territories move over 800km²

every year (Caro, 1994). This system, where males are social and hold small territories, and females are solitary moving across several male territories annually, is known in no other mammal species (Gottelli *et al.*, 2007).

Cheetah females are able to give birth to their first litter at two years of age, after a three-month gestation (Caro, 1994). The cubs are kept in a lair for the first two months of their life, while their mother leaves them to hunt every morning and returns at dusk (Laurenson, 1993). Cheetah cub mortality can be high: in the Serengeti, mortality of cubs from birth to independence was 95% (Laurenson, 1994). There, cubs died mostly because they were killed by lions or hyaenas: mothers cannot defend cubs against these much larger predators (Laurenson, 1994). Cubs may also die from exposure or fire, or from abandonment if their mother is unable to find food. If they survive, the cubs will stay with their mother until they are 18 months old, after which they will roam with their littermates for another six months (Caro, 1994). The longest recorded longevity in the wild is 14 years for females and 11 years for males; however females have never been recorded as reproducing beyond 12 years (Durant unpublished data). Demographic parameters are available for only a small number of populations: mean and variance of birth and survival have been published from the long term study in the Serengeti National Park in Tanzania (Durant, Kelly & Caro, 2004), whilst mean birth and survival rates are available from ranch lands in Namibia (Marker *et al.*, 2003b).

Cheetah are predominantly diurnal, although hunting at night is not uncommon (Caro, 1994). They hunt by a stealthy stalk followed by a fast chase. Because of their unrivalled speed and acceleration, cheetah can hunt successfully even if they start a chase at a much greater distance than bulkier and heavier large cats, such as lions and leopards (*Panthera pardus*). They take a wide variety of prey, depending on habitat and geographic location, but they prefer prey of 15-30kg: the size of a Thomson's gazelle (*Gazella thomsonii*) or impala.

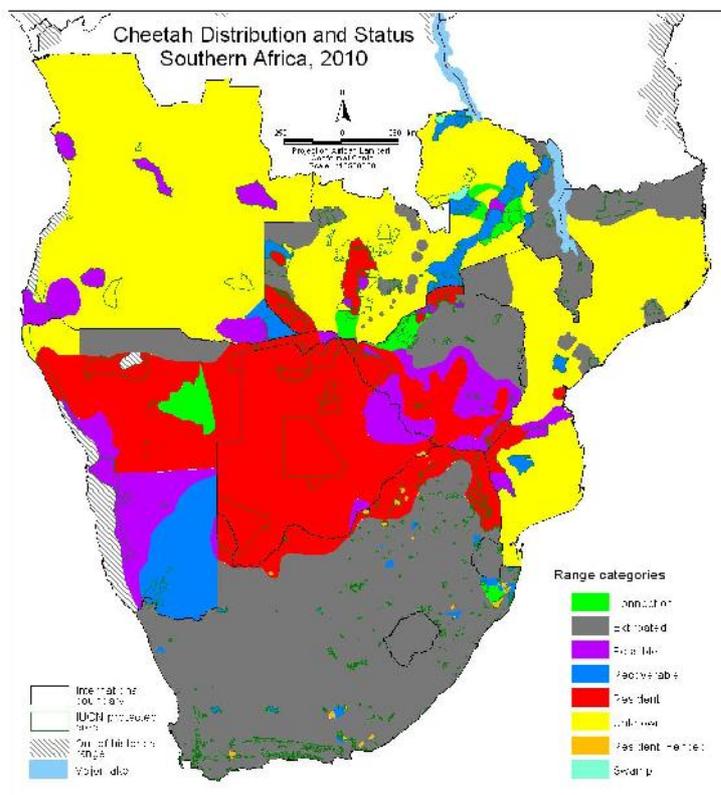
As with wild dogs, and unlike most other large carnivore species, cheetah tend to avoid areas of high prey density, probably because other large carnivore species are found in these areas (Durant, 1998, 2000). Lions have been documented to be largely responsible for the high mortality of cheetah cubs observed in the Serengeti (Laurenson, 1994), and will also kill adults, whilst hyaenas can kill cubs and will steal kills from cheetah.

Cheetah used to be widespread across Africa and across Asia as far east as India. However, today there are no cheetah left in Asia except for a small population in Iran, and only a few populations remain in north and west Africa. Most of the remaining cheetah are concentrated in sub-Saharan Africa. The first status survey for cheetah was in the early 1970s (Myers, 1975), later surveys of selected countries were conducted in the 1980s (Gros, 1996, 1998, 2002; Gros & Rejmanek, 1999), and a summary of global status was collated in 1998 (Marker, 1998). However, accurate information on status and densities are extremely difficult to collect for this species, which is shy and rarely seen across most of its range. Furthermore, the ranging patterns of the species incline it to cluster in areas that become temporarily favourable habitat (due to the absence of competitors and availability of prey), making estimating numbers additionally problematic (Durant *et al.*, 2007).

Like wild dogs, and probably because of similar tendencies to avoid larger predators, cheetah live at low densities with recorded densities ranging between 0.3-3 adult cheetah/100km² (Burney, 1980; Gros, 1996; Marker, 2002; Mills & Biggs, 1993; Morsbach, 1986; Purchase, 1998). Although markedly higher estimates have been documented in some areas, it is likely these estimates do not reflect true density, as individuals counted may roam outside the survey area (highlighting a general problem with surveying cheetah, see Bashir *et al.*, 2004).

Home range has been recorded as ranging from 50km² for territorial males in the Serengeti (Caro, 1994) to over 1,000km² in Namibia (Marker *et al.*, 2008). Like wild dogs, cheetah home ranges are much larger than would be predicted from their energy needs (Figure 2.1). Because they can range across such large areas, cheetah can also disperse widely, having been recorded as moving over much more than one hundred kilometres (Durant unpublished data), making it difficult to determine whether occasional cheetah sightings in an area represent transient individuals or a resident population. However, this ability to disperse enables cheetah to recolonise new areas fairly easily if and when they become available.

The species is listed as vulnerable by the IUCN red list (IUCN, 2006a). In Southern Africa, the regional workshop held in 2007 estimated that there were around 6500 cheetahs in the region, in one large contiguous population encompassing Namibia, Botswana, South Africa, Zimbabwe and Zambia and a number of smaller apparently isolated populations (see Figure 2.1 for the range map for cheetahs as of December 2010)



Declines have been largely attributed to habitat loss and fragmentation (Marker *et al.*, 2003a; Marker *et al.*, 2003b; Myers, 1975). The disappearance of the species from across nearly its entire Asian range was in part also due to the habit of the Asian aristocracy of capturing and using cheetah for hunting (Divyabhanusinh, 1995). Today, in sub-Saharan Africa, lethal control due to perceived or actual conflict with livestock or game ranching also plays a strong role in the decline of the species (Marker *et al.*, 2003a; Marker *et al.*, 2003b; Myers, 1975), and an increasing threat is capture for trade in live animals (IUCN/SSC 2007).

Figure 2.1 Range map for cheetah in Southern Africa (December 2010) showing areas of resident range (red), possible range (purple), connecting range (green), extirpated range (non recoverable) – grey, and extirpated range (recoverable) – blue. Source: www.cheetahandwilddog.org

Wild dog:

African wild dogs are highly social members of the canid family. Packs cooperate to hunt their prey (Creel & Creel, 1995), which consists mainly of medium-sized ungulates (particularly impala,

Aepyceros melampus) but may range in size from hares (*Lepus* spp) and dik diks (*Madoqua* spp, Woodroffe *et al.*, 2007b) to kudu (*Tragelaphus strepsiceros*) and even, occasionally, eland (*Taurotragus oryx*, Van Dyk & Slotow, 2003). Packs also cooperate to breed, with usually only one female and one male being parents of the pups, but all pack members contributing to pup care (Malcolm & Marten, 1982). As females have never been observed to raise pups to adulthood without assistance from other pack members, packs, rather than individuals, are often used as the units of measuring wild dog population size.

Unlike most carnivore species (apart from cheetah), wild dogs tend to avoid areas of high prey density, apparently because larger carnivores prefer such areas (Creel & Creel, 1996; Mills & Gorman, 1997). Lions (*Panthera leo*) and spotted hyaenas (*Crocuta crocuta*) both represent important causes of death for adult and juvenile wild dogs (Woodroffe *et al.*, 2007a).

Probably because of this tendency to avoid larger predators, wild dogs live at low population densities and range widely. Population densities average around 2.0 adults and yearlings per 100km² (Fuller *et al.*, 1992a) and home ranges average 450-650km² per pack in southern Africa (Woodroffe & Ginsberg, 1998), with some packs ranging over areas in excess of 2,000km² (Fuller *et al.*, 1992a). Both wild dogs and cheetah occupy home ranges larger than would be predicted on the basis of their energy needs (Figure 2.2).

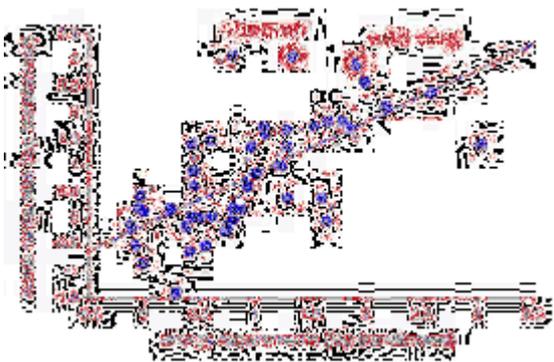


Figure 2.2 The relationship between energy requirements and home range size in multiple carnivore species, showing the large home ranges occupied by cheetah and wild dogs in comparison with their energy needs. Wild dogs are recorded as having greater needs than cheetah because the social unit is a pack rather than an individual. Data are from Gittleman & Harvey (1982).

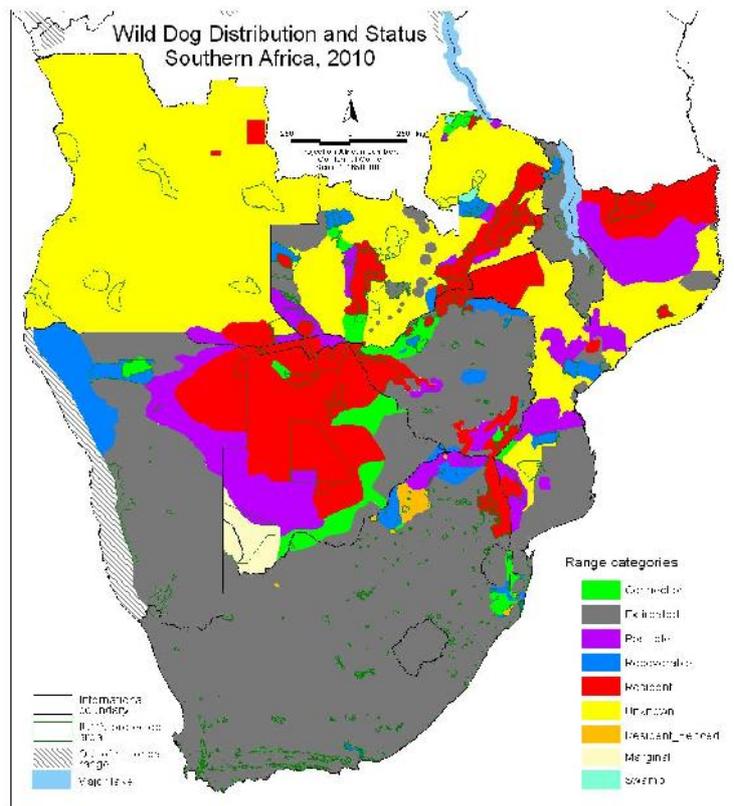
Most new wild dog packs form when young animals (usually but not always in their second year, McNutt, 1996) leave their natal packs in same-sex dispersal groups, and seek new territories and members of the opposite sex. Such dispersal groups may travel hundreds of kilometres (Fuller *et al.*, 1992b), and have been recorded in areas very remote from resident populations (Fanshawe *et al.*, 1997). This dispersal behaviour can complicate the interpretation of distribution data, as sightings of small groups of wild dogs do not necessarily indicate the presence of a resident population. However, the behaviour does allow wild dogs to recolonise unoccupied space when opportunities arise.

Wild dog populations in different regions of Africa are morphologically and genetically different, but no subspecies are recognised (Girman & Wayne, 1997; Girman *et al.*, 1993). Wild dogs are habitat generalists, and have been recorded in habitats as diverse as wooded savannah (Creel & Creel, 2002), short grasslands (Kuhme, 1965), montane forest (Dutson & Sillero-Zubiri, 2005), montane moorland (Thesiger, 1970) and mangroves.

The first status survey for wild dogs was conducted in 1985-8 (Frame & Fanshawe, 1990), and this was updated in 1997 (Fanshawe *et al.*, 1997) and 2004 (Woodroffe, McNutt & Mills, 2004). These surveys revealed substantial loss and fragmentation of wild dog populations, with the species extirpated across most of western and central Africa, and greatly depleted in eastern and southern

Africa. However distribution data, which were collated mainly by exhaustive postal correspondence, were somewhat biased towards protected areas with little information available from unprotected lands. By 1997, wild dogs had disappeared from most of Africa's protected areas, persisting only in the largest reserves (Woodroffe & Ginsberg, 1998). In 2004 the species was estimated to number

fewer than 6,000 adults and yearlings (Woodroffe *et al.*, 2004). The species is listed as 'endangered' by the IUCN (IUCN, 2006a). In 2007, at the Southern Africa regional workshop it was estimated that there were less than 750 packs of wild dogs left in the region (see Figure 2.3 for range map for wild dogs as of December 2010)



Wild dogs' decline has been related to their limited ability to inhabit human-dominated landscapes. Where human densities are high and habitat consequently fragmented, wild dogs encounter hostile farmers and ranchers, snares set to catch wild ungulates, high speed traffic, and domestic dogs harbouring potentially fatal diseases (Woodroffe & Ginsberg, 1997). While these threats are common among large carnivores, wild dogs' low population densities and wide-ranging behaviour mean that they are both more exposed to, and more susceptible to, these human impacts than are most other species (cheetah being a possible exception).

Figure 2.3 Range map for wild dog in Southern Africa (December 2010) showing areas of resident range (red), possible range (purple), connecting range (green), extirpated range (non recoverable) – grey, and extirpated range (recoverable) – blue. Source: www.cheetahandwilddog.org

Despite these human impacts on their populations, wild dogs can coexist successfully with people under the right circumstances (Woodroffe *et al.*, 2007b). Wild dogs seldom kill livestock where wild prey remain at even comparatively low densities (Rasmussen, 1999; Woodroffe *et al.*, 2005b), and traditional livestock husbandry is a highly effective deterrent (Woodroffe *et al.*, 2006). Tools have been developed to reduce the impacts of conflicts with game and livestock ranchers, accidental snaring, and road accidents, although safe and effective tools to manage disease risks are still under development (Woodroffe *et al.*, 2005a)

2.2 Revised range maps for cheetah and wild dog in Malawi

One of the key activities of a National Planning workshop is the revision of range maps created at the regional workshop. At each National Planning workshop, there are people present with information about the two species, including where they are known to exist and where they could exist with

improved management. This activity also allows for open discussions of threats to the two species, and how these threats can be alleviated.

At the regional workshop in 2007 participants created range maps for cheetah and wild dog based on six population categories – 1) *resident*: the species is known to exist and breed; 2) *possible*: the species might exist and be breeding but there are no reliable records; 3) *connecting*: areas where the species does not reside, but that are important for dispersal between resident populations; 4) *marginal*: the species exists and breeds but at low density; 5) *extirpated*: the species no longer exists in such areas, and is unlikely to exist in the future; and 6) *recoverable*: the species does not exist at present but could recolonise the area either naturally or artificially as a result of improved management.

In Malawi, it was acknowledged at the beginning of the workshop that cheetah no longer exist in the country, with the last confirmed sighting more than ten years ago. Wild dog are still present in the Kasungu National Park although the packs are not always resident every year but link through to Zambia. The most recent sightings of wild dogs was in April 2011, it appears that a pack of wild dogs may be using the area around Lifupa lodge as they have been seen a number of times (see figure 2.4 below)

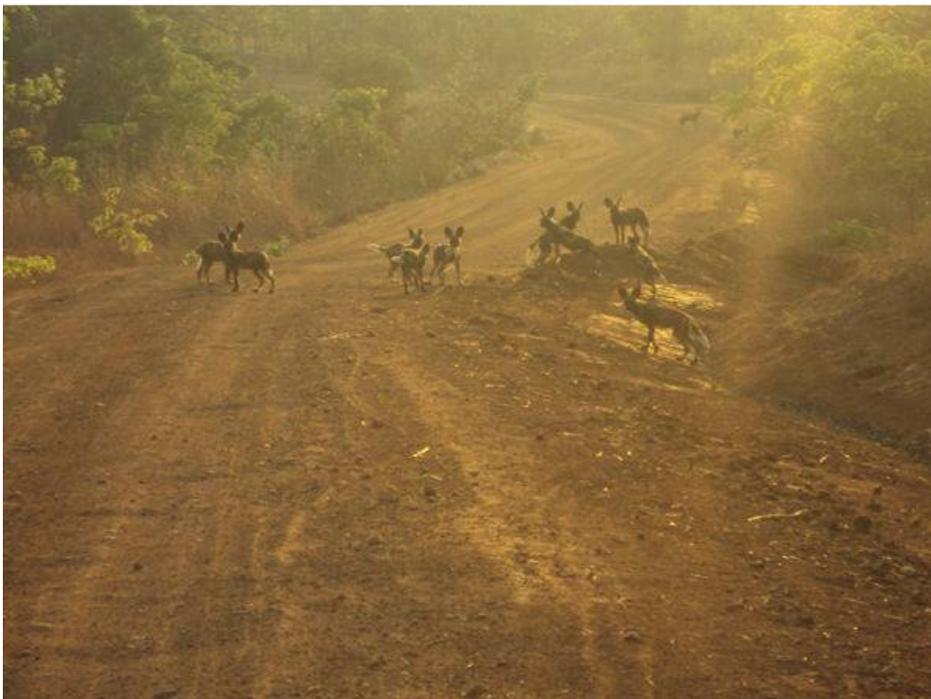


Figure 2.4: A photograph of a pack of wild dogs taken near Lifupa lodge in Kasungu National Park in April 2011 (Source: Mr Lipiya, Warden Kasungu National Park)

Hence the revisions to the range maps for cheetah and wild dog in Malawi focused on looking at where restoration would be possible, in other words identifying areas of recoverable range (see definition above). The discussions were lively and positive and as a result a number of possible recoverable areas were identified for the two species, where either natural recolonisation could happen or managed recovery would be possible. It is important to note here that government commitment to wildlife conservation in Malawi has slowly been increasing and the participants were positive that this trend would continue as Malawi needs other economic activities that produce the much needed foreign currency and creation of jobs. Tourism and other related wildlife conservation activities are increasing seen as a partial solution to this need.

2.1.1 Potential for recovery of cheetah in Malawi

Participants used the range map for cheetah that had been drawn up at the regional workshop in 2007 as a guide to identifying areas of Malawi where recovery of cheetah would be possible. Such areas were identified in the knowledge and understanding that cheetah require large areas (>5000) to maintain populations without management, and that is the area available was less than the cheetah populations would require active meta-population management.

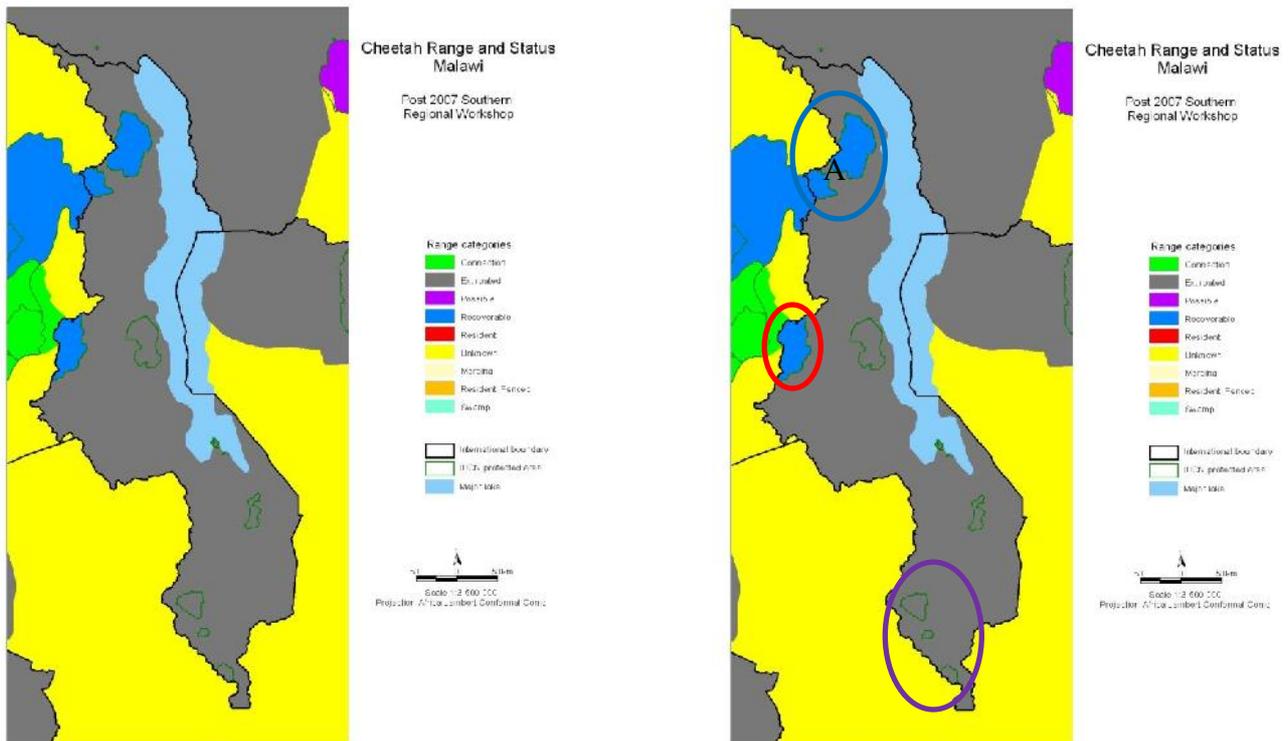


Figure 2.5: Range maps for cheetah in Malawi a) as developed at the regional workshop in 2007 with revisions from the Zambia and Mozambique national action planning processes incorporate, and b) as revised during the NAP workshop in Malawi in May 2011: Blue areas indicate potential recoverable range. Blue, red and purple circles are different recoverable areas and are referred to in the text.

After much discussion it was agreed that restoration without the need for long term meta-population management would be possible around 3 protected areas of the country: Nyika, Vwaza Marsh and Kasungu. Restoration would be possible in the three southern national parks of Majete, Lengwe and Mwabvi in that habitat and suitable prey are available and management has improved with subsequent increased protected of the wildlife populations. However, the size of these parks is too small to allow for restoration without long term management and would have to be done under a meta-population management system similar to that used in the small reserves of South Africa (see section 2). Nkotakota National Park and Liwonde national park were considered unsuitable habitat (the former) and too small and isolated (the latter) for restoration of cheetah

1.1.1 Kasungu national park: (green circle on Map B in Figure 2.5)

It was agreed that this national park would be the first restoration area to be considered by the DNPW as cheetahs were seen here more recently (mid 1990's) than Nyika and Vwaza Marsh. Kasungu National Park is approximately 2000km² in extent but there are linkages through to

Lukusuzi National Park in Zambia (and a proposed transfrontier conservation area in development) and ultimately through to the complex of protected areas in Zambia around the Luangwa national parks. Initially the 2000km² would be suitable for release and the population of cheetah could expand into the transfrontier area over time. It was acknowledged that prey populations at present might be too low to consider restoration given the poaching and impact of human communities on the ungulate populations of the park, but the DNPW has embarked on a larger programme to restore species to Kasungu using source populations in other parts of the country. It was agreed that this restoration would depend on cooperation with the Zambia Wildlife Authority and community leaders on the Zambian side, but this process has already been initiated between the two countries. The desire to restore cheetah to the Luangwa and Lukusuzi national parks has also been recorded in the Zambia National Action Plan for cheetah and African wild dog (2009 – draft) and so there is commitment on both sides of the national border

1.1.2 Nyika/Vwaza Marsh national parks (blue circles on Map B in Figure 2.5)

These two national parks together form an area of approximately 4000km² in extent, given that they are connected through a narrow corridor between the two parks (area A on map B in Figure 3), where people are present but the distances are small enough to facilitate movement of cheetah, assuming that the people living in the corridor can be encouraged to be tolerant to their presence. However, given that cheetah are not a threat to human life, and the extensive education network that the Wildlife Society of Malawi (WES-M) has created in the country it was felt that sensitization of the communities in the corridor and surrounding the national parks would could be carried out resulting in increased tolerance.

In addition, these two protected areas now extend into Zambia under the Nyika Transfrontier Conservation Area (TFCA) which extends an area that could in future be available and protected for cheetah by another 2000km² approximately. Funding for the establishment and protection of this TFCA has already been provided to both the Malawian and Zambia governments. However, the park was thought to not be as suitable for cheetah as Kasungu given the very low ungulate numbers at present and the fact that numbers are unlikely to increase for a number of years.

1.1.3 Lengwe and Majete (with eventual inclusion of Mwabvi) meta-population cluster (purple cluster on Map B, Figure 2.5)

The small Lower Shire protected areas of Lengwe and Majete were argued to have suitable habitat and prey populations for cheetah, and both areas were under improved management resulting in increased protection and increased involvement of surrounding communities. However, the two protected areas are small in extent, providing only 1500km² when combined (which would be possible given the short distance between them). They are also isolated from any other areas with cheetah (except the possibility that cheetah occur in the Tete Province of Mozambique, but all sightings from this area of the country are south of the Zambezi River). This means that without management any reintroduced cheetah populations will not persist into the future. However, participants argued that given the tourist potential for such areas they should be included as possible restoration sites but only under a managed meta-population system where it would be acknowledged that the populations would need to be actively managed. This cluster was not a priority for restoration but it was agreed that in the future it may be possible for the Dept of Parks and Wildlife and its partners in protected area management to implement a meta-population programme.

2.1.2 Potential for recovery of wild dog in Malawi

It was acknowledged at the workshop that the potential for natural recovery of wild dog populations in Malawi was high given that populations in Zambia (identified and mapped at the Zambia National

Planning workshop in 2009) extend up until the Malawi border in two key areas – Vwaza Marsh National Park and Kasungu National Park (Figure 2.6). This expectation was increased by reports during the workshop of wild dogs in Vwaza Marsh national park and the pack that was seen in Kasungu National Park in April 2011. However, it was also agreed by participants that the wild dogs that have been, or are being seen, may not establish viable populations unless there is increased protection of both the species and the prey base it relies on. Future restoration efforts in the country must focus on these issues as it may be that natural recolonisation has not yet taken place from the populations known to exist in Zambia due to these threats.

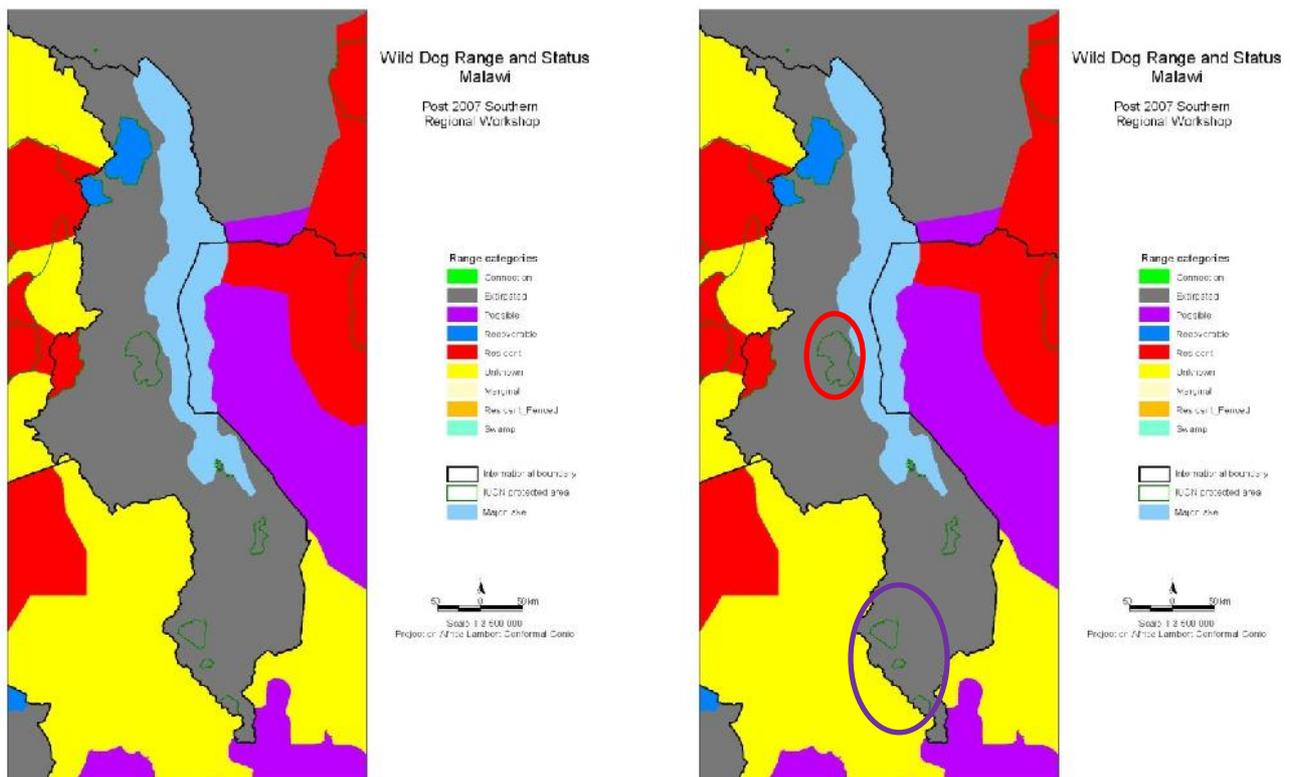


Figure 2.6: Range maps for wild dogs in Malawi a) as developed at the regional workshop in 2007 with revisions from the Zambia and Mozambique national action planning processes incorporated, and b) as revised during the NAP workshop in Malawi in May 2011: *Blue areas indicate potential recoverable range. Blue, red and purple circles are different recoverable areas and are referred to in the text.*

The participants of the workshop also argued that there were other protected areas in the country where wild dogs could be restored, namely Nkotakota national park (red circle on Map B, Figure 2.6) and the Lower Shire protected areas of Lengwe, Majete and Mwabvi (purple circle on Map B, Figure 2.6). However, these areas are small and relatively isolated and so meta-population management may need to be considered for restoration, although wild dogs do exist in the Tete Province of Mozambique and so the Lower Shire national parks may be able to maintain populations through linkages to this larger population. The corridors that are available would need to be assessed prior to a reintroduction.

2.3 Meta-population management and restoration of cheetah in South Africa: lessons learned

A metapopulation consists of a group of spatially separated populations of the same species which interact at some level. The populations exist separately but interact as a result of migrations in between the populations. In South Africa a meta-population of cheetah exist but linkages between the separate populations is managed by humans and does not occur naturally, this is referred to as a managed metapopulation.

Most cheetahs in South Africa are found outside of conservation areas on private lands usually in areas of cattle and game ranching. Conflict occurs on such ranches as cheetahs prey on livestock and other wild species which are of value to men.

Following the development of a national action plan for cheetah and wild dog conservation in South Africa, the Endangered Wildlife Trust embarked on a project to facilitate a national managed cheetah metapopulation. This project began in 2008, the main goal was to develop and coordinate a metapopulation management plan for cheetahs in smaller fenced reserves, but was formalised in 2009 at the NAP workshop.

The cheetahs being used in the restoration programme were initially being taken from cattle and wildlife ranches as part of a conflict resolution project. However removal of cheetahs from ranch land is no longer used as a conflict resolution technique due to a number of reasons. Firstly, there was concern as to the effects of the removals which could negatively impact the populations. There was also a realisation that the population of cheetahs in the small reserves was large enough to sustain the larger managed meta-population. Lastly, it was generally recognised that removing certain individuals from the populations did not adequately address the conflict between people and cheetahs.

By 2010, Cheetahs have been reintroduced into 37 reserves in South Africa, and a population of approximately 280 cheetahs now occurs in these fragmented subpopulations.

Currently, cheetahs for reintroduction are acquired from those reserves which already have viable populations. The cheetahs are caught in their initial reserves using cage traps and are then moved to the new reserve where they are kept in a boma for several weeks. This is done to allow the cheetahs to get used to the presence of people and vehicles and the males are also given a chance to bond and form coalitions.

During this time, they are immobilised and blood samples taken so as to keep a record of their family lines. They are also fitted with collars, (either VHF or GPS depending on the characteristics of the reserve). Their health is also checked to ensure their fitness which is critical to their survival in an unfamiliar place.

The reserve into which cheetahs are being reintroduced should meet certain standards for it to be considered as part of the meta-population for cheetah, as listed below;

- A practicable management plan which is clear and relevant to the reserve.
- A monitoring programme to keep track of all the introduced cheetahs, their home ranges, lineages and health.
- Applicable permits which prove that it is suitable for reintroductions and that they are legal.
- The reserve should also have a prey base that can sustain the cheetah population for at least the first two years to ensure that their survivorship is not affected by lack of prey.

- The reserve should also be adequately fenced to prevent movements in and out which can affect the outcome from the monitoring programmes. To ensure the security of the cheetahs, an electric fence is thus used to fence the reserve.
- The need to engage with neighbours so as to come up with a coordinated management plans which does not lead to conflict of interest between different enterprises is a key process that a reserve has to do through prior to receiving cheetah.
- Education and sensitisation also came up as vital to make sure people are aware of what exactly a cheetah is, what it does and that it is not dangerous to people .
- Livestock protection measures are also encouraged such as the use of guard dogs in case cheetahs have access to livestock.

Reintroductions need a coordinated management plan whereby activities are planned and properly done. To ensure genetic diversity, cheetahs from different reserves are exchanged at appropriate times to prevent inbreeding

A lot of challenges were faced in the reintroductions. First, the cost of cheetahs may be too high. Reserve owners often develop ‘emotional’ links with their cheetahs and are then reluctant to give it up for other reserves. Another problem is that cheetahs become too habituated to the presence of people.

An analysis of survivorship showed that cheetahs are negatively affected by competition with other predators as the presence of competitors greatly reduces the survivorship of females, males and cubs. The analysis of causes of death showed that other predators caused the highest number of deaths in cheetahs hence the presence of other predators should be taken into consideration when planning on reintroduction. The second highest loss was of those cheetahs that simply went missing. Natural deaths and diseases also caused a reasonable number of deaths

However a number of challenges to this approach in restoring cheetah have been identified which are relevant to the Malawi national action planning workshop:.

- Population management: this is key to a viable long term meta-population and all reserves taking part need to agree to share cheetahs and the cost of moving cheetahs between them.
- Impact on prey populations: a healthy growing cheetah population has the capacity to deplete the prey available inside a closed reserve (either with a fence or by human populations). Inside a closed reserved a cheetah population has the potential to deplete the available prey base if they increase beyond a certain point.
- Managing possible conflict with neighbours:
- Long term commitment: it was recognised that the reintroduction programme needs to be monitored over a long time to establish its success but people seemed to lose interest quickly or assume that the programme has been a success too early and withdraw their attention
- Genetic management: as the family line becomes longer, it becomes difficult to keep track of all the records.

3. Development of the national action plan for cheetah and wild dog in Malawi

Using all the background information above that was presented to all participants, the next stage in the process is to review all levels of the regional strategy (Vision and goal statements, objectives, targets and activities) and to assess whether these elements are a) relevant and b) achievable in the context of cheetah and wild dog conservation in Malawi. Participants are encouraged to closely

evaluate the elements from the regional strategy and revise them accordingly. They are also encourage to add or remove elements in order to ensure that conservation of cheetah and wild dog in Malawi will be successful.

3.1 Vision and Goal statements

The vision goal and objectives of the regional strategy were discussed in plenary to adapt them for a national action plan for Malawi

There was consensus among participants that the vision and goal that had been developed for the regional strategy was relevant at the national level of planning and the two components of the plan were adopted with no change.

The final vision and goal statements were agreed as follows:

Vision

Secure, viable cheetah and wild dog populations across a range of ecosystems, that successfully coexist with, and are valued by, the people of Malawi.

Goal

Improve the status of cheetahs and wild dogs, and secure additional viable populations of cheetahs and wild dogs across their range in Malawi

3.2 Objectives

The objectives of the regional strategy were discussed in plenary and the following objectives were approved by all participants.

Objective 1: Capacity Development: Participants agreed that the wording of this objective from the regional strategy was appropriate at the national level for Malawi, and the only change in wording was to remove “Southern Africa” and replace it with “Malawi”.

Objective 2: Knowledge and information: After much discussion about whether the words “conservation biology” also incorporated “needs” it was agreed that the wording of this objective at the regional level was suitable at the national level, with Southern Africa changed to “Malawi”

Objective 3: Information transfer: Participants agreed that the original wording of this objective from the regional strategy was appropriate, although it must be noted that commitment of stakeholders also implies that the species are valued by the people of Malawi.

Objective 4: Coexistence: There was much discussion over the wording of this objective as it was pointed out that as cheetah are not present in Malawi, and wild dog exist in only one protected area in very small numbers, that conflict was not the main issue but rather co-existence. However, it was also agreed that conflict may begin to arise as populations of the two species recover in future and so participants wanted the need to manage and mitigate conflict to remain in the wording of the objective.

Objective 5: Land use: This objective was kept by the participants of the workshop, with only a grammatical change made to the wording as it was agreed that this was necessary to achieve in Malawi.

Objective 6: Political Commitment: Participants agreed that this objective was relevant but argued that there was already political commitment to wildlife conservation (which would include cheetah and wild dog) and so changed the word “Obtain” to “Enhance”.

Objective 7: Policy and Legislation: Participants recognised that it was not possible to review and revise international legislation under a national action plan, and reworded the objective to focus on national legislation review.

Objective 8: Implementation: The participants argued very strongly that implementation of the national action plan was key for the conservation of the two species, but discussion also focused on how the implementation of the Malawi NAP would help implement the larger regional strategy as well. The objective was, therefore, reworded to show this relationship.

Objective 9: Restoration of populations: All participants agreed that there was need for a specific objective under the Malawi NAP to guide restoration of the two species in the country. All participants agreed that restoration should be encouraged wherever possible (incorporating all issues including biological, social and economic) but within the historical range of the two species in the country.

The final objectives agreed upon at the national workshop included:

Objectives

- 1 Develop capacity in all aspects of cheetah and wild dog conservation in Malawi. *(Capacity Development)*
- 2 Improve knowledge on the conservation biology of wild dogs and cheetahs across Malawi. *(Knowledge and information)*
- 3 Develop and implement mechanisms for the transfer of information relevant to cheetah and wild dog conservation and ensure active commitment of stakeholders. *(Information transfer)*
- 4 Promote coexistence and manage conflict between cheetah, wild dogs and people across Malawi. *(Coexistence)*
- 5 Minimise adverse effects of land development and promote implementation of best land use practice for cheetah and wild dog. *(Land development and land use)*
- 6 Enhance political commitment to the conservation needs of cheetah and wild dogs in Malawi. *(Political commitment)*
- 7 Review and, where necessary, revise, national and local legislation and policies affecting cheetah and wild dog conservation in Malawi. *(Policy and legislation)*
- 8 Facilitate conservation of cheetah and wild dog in the Southern Africa region by implementing the Malawi national action plan. *(Implementation)*
- 9 Restore populations of cheetah and wild dog in Malawi, wherever possible within historical range. *(Population restoration)*

3.3 Targets and activities

After agreeing in plenary on the objectives of the national action plan, the participants were divided into 5 working groups. Each group was tasked with reviewing and revising, where necessary, the targets and activities under each of the eight objectives from the regional strategy adopted during the previous plenary session, or in the case of the new objective nine (population restoration) developing targets and activities. The working groups given objectives were as follows:

Working group 1

- 1 Develop capacity in all aspects of cheetah and wild dog conservation in Malawi
4. Promote coexistence and manage conflict between cheetah, wild dogs and people across Malawi.

Working group 2

- 2 Improve knowledge on the conservation biology of wild dogs and cheetahs across Malawi.
- 3 Develop and implement mechanisms for the transfer of information relevant to cheetah and wild dog conservation and ensure active commitment of stakeholders

Working group 3

5 Minimise adverse effects of land development and promote implementation of best land use practice for cheetah and wild dog

8 Facilitate conservation of cheetah and wild dog in the Southern Africa region by implementing the Malawi national action plan

Working group 4

6 Enhance political commitment to the conservation needs of cheetah and wild dogs in Malawi

7 Review and, where necessary, revise, national and local legislation and policies affecting cheetah and wild dog conservation in Malawi

Working group 5

9 Restore populations of cheetah and wild dog in Malawi, wherever possible within historical range

The final revisions to the targets and activities under each objective are included in the section below. Responsible parties and time frames are included in the log frame in the appendices.

3.4 Final national action plan components

1. Capacity Development

Objective: Develop capacity in all aspects of cheetah and wild dog conservation in Malawi.

CD1 Target: Identify gaps in capacity in all areas of cheetah and wild dog conservation in Malawi within two years.

Activities:

CD1.1 Conduct interview and questionnaire surveys to establish current situation and identify gaps for all capacity components within one year

CD2 Target: Develop and implement one annual law enforcement and conflict resolution training programme in Malawi within three years.

Activities:

CD2.1 Develop a list of wildlife and law enforcement training academia/institutions, including curricula, and identify gaps, within six months.

CD2.2 Develop law enforcement and conflict resolution training modules that encompass Malawi training needs within 24 months.

CD2.3 Activate and source funds to support an annual law enforcement and conflict resolution training programme in Malawi within three years

CD2.4 Develop and implement one annual law enforcement and conflict training programme in Malawi within two years.

CD3 Target: Establish a network of programmes and institutions to develop capacity in research, monitoring, education and outreach within one year.

Activities:

CD3.1 Create a database of institutions and programmes involved in research, monitoring, education and outreach within one year.

CD3.2 Establish a committee to drive the development of a national capacity network within one year.

CD3.3 Develop a web portal to provide an interface between network members and the public within one year.

2. Improving knowledge

Objective: Improve knowledge and expand research on the conservation biology of wild dogs and cheetahs across Malawi.

IK1 Target: Generate and disseminate standardised, quantitative knowledge of conflict, threats and their drivers and mitigation across southern Africa within five years.

Activities:

- IK1.1 Compile available data on conflict, threats and their mitigation and, where possible, collate in standardised formats, from all range states within two years..
- IK1.2 Identify shortfalls in existing knowledge about conflict, threats and their mitigation for all range states within two years
- IK1.3 Initiate studies (field studies, surveys, questionnaires and existing data) to quantify conflict, threats, their drivers and mitigation, and effects on population viability; ongoing.
- IK1.4 Organise and hold a workshop to collate national information on conflict, threats and their mitigation within two years
- IK1.5 Create a regional database of information on conflict, threats and their mitigation for southern Africa within three years
- IK1.6 Generate knowledge on present and emerging threats to cheetah and wild dog conservation, including illegal trade
- IK1.7 Disseminate knowledge regarding conflict, threats, their drivers and mitigation to all relevant stakeholders within five years

IK2 Target: Identify and evaluate the efficacy of various mitigation measures (including cost-benefit analysis of techniques) within five years.

Activities:

- IK2.1 Initiate multiple studies across the region on the efficiency of various mitigation measures and their cost-benefit ratios; ongoing.
- IK2.2 Collate and analyse all data from above in consultation with involved parties.

IK3 Target: Gain better understanding of dispersal, habitat use and connectivity for cheetah and wild dogs within five years

- IK3.1 Initiate field studies on dispersal mechanisms in both species, including factors influencing dispersal success, within five years
- IK3.2 Initiate studies on cheetah and wild dogs feeding ecology in different areas in relation to potential range within five years.

3. Information transfer

Objective: Develop and implement mechanisms for the transfer of information relevant to cheetah and wild dog conservation and ensure active commitment of stakeholders.

IT 1 Target: Identify relevant benefits to local communities, governments and landowners within three years.

Activities:

- IT1.1 Conduct literature review to consolidate information on potential benefits of cheetah and wild dog conservation across the country within one year.
- IT1.2 Hold meetings and workshops with communities, then landowners, then 1 government, to collect information to identify relevant incentives and benefits.

IT 2 Target: Develop multimedia projects in Malawi, building on the best existing material, within five years.

Activities:

- IT 2.1 Develop web based interactive reporting of sightings, data, findings and activities relevant to cheetah and wild dog conservation.

- IT2.2 Use posters, leaflets, radio, TV, video, pictures and theatre groups } to disseminate information locally within two years.
- IT 2.3 Develop and distribute standardised forms across range states to collect information on cheetah and wild dog distribution, especially in areas where information gaps occur, within three years.

***IT3 Target:** Promote national awareness of local threats in Malawi within five years*

Activities:

- IT 3.1 Establish competitions, essays, etc. in schools and groups to enhance and highlight conservation education.
- IT3.2 Develop curricula regarding cheetah and wild dogs and integrate with activities of youth conservation clubs(e.g. Chongololo in Zambia, Malihai in Tanzania and Wildlife Club in Botswana).
- IT3.3 Encourage sponsorship of sports teams, clubs and groups named after cheetah and wild dogs at all levels

4. Coexistence

Objective: Promote coexistence and manage/mitigate conflict between cheetah, wild dogs and people across Malawi

***C1 Target:** Substantially reduce levels of incidental mortality in cheetah and wild dogs in Malawi within five years..*

Activities:

- C1.1 Clarify and monitor extent of incidental mortality of cheetah and wild dogs in Malawi within three years.
- C1.2 Substantially reduce snaring mortality of cheetah and wild dogs through initiatives such as anti-poaching efforts and community conservation, within five years.
- C1.3 Where appropriate, initiate programmes known to be effective at managing diseases that threaten cheetah and wild dog population viability, within five years.
- C1.4 Implement targeted, enforceable programmes which reduce road mortality of cheetah and wild dog within five years.
- C1.5 Identify and remove, as much as possible, sources of snare wire; ongoing
- C1.6 Promote and implement land use practices compatible with cheetah and wild dog conservation, within five years

***C2 Target:** Raise awareness of issues related to cheetah and wild dog conservation among relevant stakeholders in Malawi within three/two years.*

Activities:

- C2.1. Develop and disseminate education and awareness material, building on best existing material, for both adults and children in Malawi within two years.
- C2.2 Create and implement multimedia programmes to raise awareness and understanding of cheetah and wild dog conservation in Malawi within two years.
- C2.3 Sensitise leaders to the value of cheetah and wild dog conservation.

***C3 Target:** Measurably increase perceived intrinsic and economic value of cheetah and wild dogs to all stakeholders within five years.*

Activities:

- C3.1 Quantify and monitor the perceived intrinsic and economic value of cheetah and wild dogs to all stakeholders
- C3.2 Develop appropriate value-added activities, such as tourism, in Malawi within five years.
- C3.3 Investigate and highlight cultural values of cheetah and wild dogs across Malawi within two years

- C3.4 Where relevant, develop self-sustaining community schemes that offset the costs of, and internalise the responsibilities for, conflict within three years.
- C3.5 Where appropriate, develop income generation and capacity development projects linked to cheetah and wild dog conservation within three years.

5. Land development and land use

Objective: Minimise adverse effects of land development and promote implementation of best land use practice for cheetah and wild dog conservation in Malawi

LU1 *Target: Evaluate current land use and assess how these relate to cheetah and wild dog conservation by identifying determinants of success, within two years.*

Activities:

- LU1.1 Identify key national and local (regional) stakeholders responsible for determining current and future land use strategies
- LU1.2 Produce a national document illustrating examples of land use strategies associated with successful cheetah and wild dog conservation
Produce a national document illustrating examples of land use strategies associated with successful cheetah and wild dog conservation

LU2 *Target: Promote wildlife based land uses, multi-owner wildlife management units, and community based natural resource management in areas with potential for cheetah and wild dog conservation within four years.*

Activities:

- LU 2.1 Identify areas with the greatest potential for wildlife based land uses conducive to cheetah and wild dog conservation in Malawi within a year
- LU2.2 Develop national feasibility studies leading to business plans to help achieve the development of wildlife areas to benefit cheetahs, wild dogs and communities, within three years
- LU2.3 Prepare funding proposals to implement the business plans within one year after their development, i.e. within four years
- LU2.4 Monitor the development of wildlife based land uses, and their influence on cheetah and wild dog conservation, ongoing.
- LU2.5 Achieve a 20% increase in the area of community land used for wildlife based land uses within ten years
- LU2.6 Gain consensus on minimum required size of game farms, multi owner land management units and community conservation areas etc. for effective cheetah and wild dog conservation, within one year
- LU2.7 Develop an information booklet detailing multi owner land management units models and illustrating the potential benefits of multi owner land management units to commercial and communal landholders compared with government protected areas (game fenced farms) within one year.
- LU2.8 Identify key role players in Malawi able to drive the development of multi-owner wildlife management units, within one year
- LU2.9 Initiate national lobbying efforts to promote the development of multi-owner wildlife management units, targeted at key landholders and government representatives, within two years

LU3 *Target: Promote effective livestock husbandry and range management; ongoing*

Activities:

- LU3.1 Develop and expand current programmes throughout the country and source more funding within a year.

- LU3.2 Promote such programmes through existing agricultural, game ranching and community organisations within six months of development of those programmes, i.e. within 18 months.
- LU3.3 Initiate training programmes through accredited training facilities to increase the capacity of communities to practice responsible and sustainable range management; initiate within one year, ongoing thereafter.
- LU3.4 Assess the effectiveness of new and existing livestock husbandry and range management programmes and disseminate results; ongoing

6. Political commitment

Objective: Enhance political commitment to the conservation needs of Cheetah and wild dogs in Malawi.

PC1 Target: Sign a regional agreement to collaborate in conserving cheetah and wild dogs across southern Africa when ready and appropriate for Malawi

Activities:

- PC1.1 Meeting convened by DNPW to scrutinise the regional agreement within six months
- PC1.2 DNPW to submit the regional agreement to the minister for endorsement within six months.
- PC1.3 The ministry to attend a regional state meeting where agreement will be formally signed by the eight countries within one year.

PC2 Target: Ensure that any outstanding transboundary agreements that will benefit the conservation of cheetah and wild dogs are signed within 2 years.

Activities:

- PC2.1 DNPW and PPF to identify all outstanding agreements that will benefit cheetah and wild dogs within three months.
- PC2.2 DNPW to lobby for agreements to be signed by mobilising stakeholders and relevant government bodies, within nine months

7. Policy and Legislation

Objective: Review and, where necessary, revise, national and local legislation and policies affecting cheetah and wild dog conservation in Malawi

PL1 Target: Review of the relevance and efficacy of current national, policies and legislation pertaining to the conservation of cheetah and wild dogs, including trade in captive animals, within 5 years.

Activities:

- PL1.1 DNPW to mobilise resources to carry out an assessment of policies and legislation, compile recommendations and submit to Judiciary within 18 months.
- PL1.2 DNPW to make a follow up with Ministry Of Justice on progress to ensure that the legislation and policies are approved/enacted within 3 years.
- PL1.3 Increase information exchange amongst stakeholders and the neighbouring countries in cheetah and wild dogs trafficking to be monitored by DNPW, Police, MRA and Immigration, an ongoing activity.

PL2 Target: Improve the capacity of law enforcement and judicial agencies to implement legislation and policies relevant to cheetah and wild dog conservation within seven years

Activities:

- PL2.1 DNPW to prioritise capacity needs to implement legislation and policies relevant to cheetah and wild dog conservation within six months
- PL2.2 DNPW to mobilise resources required to improve capacity within year..

PL2.3 DNPW to develop capacity according to its priorities within five years.

PL3 Target: Attain effective communication and collaboration between all relevant law enforcement and wildlife management agencies within Malawi within five years

Activities:

PL3.1 DNPW to hold national workshops, with all relevant NGOs and government agencies involved in law enforcement present, within one year.

PL3.2 DNPW to set up national fora to meet regularly every year, starting within one year.

PL3.3 Participate in regional forum of law enforcement agencies and NGOs to meet annually; ongoing.

PL3.4 DNPW to adopt reporting mechanisms and strategies to deal with problem animal control, within one year

8. Implementation

Objective: Facilitate conservation of cheetah and wild dog in the Southern Africa region by implementing the Malawi national action plan

II Target: Endorse and implement the national action conservation action plan over ten years

Activities:

I 1.1 Edit, review and publish national workshop report.

I 1.2 Endorse national conservation action plan.

I 1.3 Disseminate national conservation action plan to stakeholders in Malawi.

I 1.4 Identify and appoint a national coordinator for the implementation of the action plan.

9. Restoration of populations

Objective: Restore populations of cheetah and wild dog in Malawi, wherever possible within historical range

PL1 Target: Identify suitable natural areas for restoration by end of 2011

PL1.1 Convene a stakeholders meeting to identify suitable natural areas for restoration of cheetah and wild dog.

PL1.2 Document results of meeting

PL2 Target: Sensitize all stakeholders and gain their support and commitment by end of 2012

PL2.1 Identify and select important stakeholders

PL2.2 Invite selected stakeholders to a round table discussion

PL2.3 Disseminate information through print and electronic media

PL2.4 Monitor and evaluate support and commitment of stakeholders

PL3 Target: Improve capacity for restoration and protection of cheetah, wild dog and prey species by 2013

PL3.1 Carry out training needs assessment

PR3.2. Design a training program

PR3.3 Organize and run a training course

PR3.4 Draw up a capture and release strategy

PR3.5 Plan and intensify law enforcement

PR3.6 Strengthen the perimeter fences

PR3.7 Establish a long term monitoring and evaluation program for cheetah and wild dog

PL4 Target: Increase trans boundary and inter agency collaboration with respect to cheetah and wild dog conservation by 2012

PR4.1. Organize bi lateral meetings, discussions and cross border joint activities

PL5 Target: *Source adequate and sustainable financial support within five years*

PR5.1 Write proposals and submit to potential donors

PR5.2 Lobby government to increase DNPW financial allocation

PR5.3 Establish a cheetah and wild dog conservation fund

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Appendix 1. List of participants

Name and contact details of participant	Photograph
<p>Mr Leonard Sefu, Director Department of National Parks and Wildlife Lilongwe, Malawi</p> <p>dpw@wildlifemmw.net</p>	
<p>Mr Mbota Deputy Director (Conservation Services) Department of National Parks and Wildlife Lilongwe, Malawi</p> <p>clementmbota@wildlifemmw.net</p>	
<p>Wisely Kawaye Senior Parks and Wildlife Officer (Education & Extension), Kasungu National Park,</p> <p>wlkawaye@gmail.com</p>	
<p>Edson Sichali, Parks and Wildlife Officer (Research & Planning), Kasungu National Park</p> <p>kasungupark@gmail.com</p>	
<p>Bryson Banda Senior Parks and Wildlife Officer Lake Malawi National Park.</p> <p>brysonbanda@gmail.com</p>	
<p>Blessings Msikuwanga Research officer Liwonde National Park DNPW</p> <p>msikuwanga@yahoo.com</p>	

<p>Dice Kamwana, Assistant Parks and Wildlife (Conservation Services), Kasungu National Park.</p> <p>kasungupark@gmail.com</p>	
<p>Mailos Zidana, Assistant Parks and Wildlife Officer, Mwabvi Wildlife Reserve</p> <p>boo@malawi.net</p>	
<p>George Banda, Parks and Wildlife Officer Vwaza Marsh Wildlife Reserve</p> <p>Goebanda-geobanda@yahoo.co.uk</p>	
<p>William Mgoola, Division Manager (Lower Shire), Lengwe National Park. Malawi</p> <p>wmgoola@yahoo.co.uk</p>	
<p>Tull Makanjila Divisional Manager, Northern Region DNPW Malawi</p> <p>tullmakanjila@yahoo.com tullmakanjila@gmail.com</p>	
<p>Mr R M Jiah Deputy Director (Education & Extension) DNPW Malawi</p> <p>ramosh@wildlifemw.net</p>	

<p>Mr Sam Kamoto Acting Director Wildlife and Environmental Society of Malawi Limbe Malawi samkamoto@africa-online.net</p>	
<p>Mr Paul Taylor Chairman, Blantyre Branch and Trustee Wildlife and Environment Society of Malawi Blantyre Malawi wesmbt@africa-online.net</p>	
<p>Mrs Mary Chilimampunga Senior Parks and Wildlife Officer (Research & Planning) DNPW Head Office, Lilongwe Malawi rp@wildlifemw.net or mchilimampunga@yahoo.com</p>	
<p>Mr H G Msiska Nyika National Park DNPW Malawi hgmsiska@gmail.com or hmsiska@yahoo.com</p>	
<p>Mr Chiza Manda Assistant Director (Conservation Services) DNPW Head office, Lilongwe, Malawi chizamanda@wildlifemw.net</p>	
<p>Mr Gervaz Thamala TFCA officer – Nyika TFCA Peace Parks Foundation Nyika National Park Malawi g_thamala@yahoo.com</p>	

<p>Mrs Kelly Marnewick Carnivore Programme Manager Endangered Wildlife Trust Johannesburg South Africa</p> <p>kellym@ewt.org.za</p>	
<p>Mr A K Lipiya Divisional manager, Central region DNPW Kasungu National Park Malawi</p> <p>kuipaalfeyo@yahoo.com</p>	
<p>Mr Leonard Moyo Research section Nkotakota National Park Malawi</p> <p>Chilando_07@yahoo.com</p>	
<p>Dr Gianetta (Netty)Purchase Coordinator, Regional strategy for cheetah and wild dog conservation in Southern Africa Zoological Society of London/Wildlife Conservation Society Bulawayo Zimbabwe</p> <p>cheetah@mweb.co.zw or spottedcat@yoafrica.com</p>	

Log frame of the draft National Conservation Action Plan for cheetahs and wild dogs in Malawi
(Note: Objectives do not appear in this log frame in any order of priority but have been included in alphabetical order)

Vision:

Secure, viable cheetah and wild dog populations across a range of ecosystems, that successfully coexist with, and are valued by, the people of Malawi

Goal:

Improve the status of cheetahs and wild dogs, and secure additional viable populations across their range in Malawi

Objective: Political commitment
Enhance political commitment to the conservation needs of cheetah and wild dogs in Malawi

Objective: Capacity Development
Develop capacity in all aspects of cheetah and wild dog conservation in Malawi

Objective: Coexistence
Promote coexistence and manage/mitigate conflict between cheetah, wild dogs and people across Malawi

Objective: Policy and Legislation
Review and, where necessary, revise, national and local legislation and policies affecting cheetah and wild dog conservation in Malawi

Objective: Information transfer
Develop and implement mechanisms for the transfer of information relevant to cheetah and wild dog conservation and ensure active commitment of stakeholders.

Objective: Improving knowledge
Improve knowledge on the conservation biology and needs of wild dogs and cheetahs across Malawi

Objective: Land development and land use
Minimise adverse effects of land development and promote implementation of best land use practice for cheetah and wild dog

Objective: Implementation
Facilitate conservation of cheetah and wild dog in the Southern Africa region by implementing the Malawi national action plan

Objective: Population restoration
Restore populations of cheetah and wild dog in Malawi, wherever possible within historical range

List of acronyms used in log frame:

Theme: Capacity Development**Objective: Develop capacity in all aspects of cheetah and wild dog conservation in Malawi**

Target	Activity	Responsible parties	Time Frame
1. Identify gaps in capacity in all areas of cheetah and wild dog conservation in Malawi within two years	1.1 Conduct interview and questionnaire surveys to establish current situation and identify gaps for all capacity components within one year	DNPW	6 months
2. Develop and implement one annual law enforcement and conflict resolution training programme in Malawi within three years.	2.1 Develop a list of wildlife and law enforcement training academia/institutions, including curricula, and identify gaps, within six months.	DNPW, University of Malawi, Mzuzu University, Malawi College of Forestry & Wildlife, Natural Resources College	6 months
	2.2 Develop law enforcement and conflict resolution training modules that encompass Malawi training needs within 24 months.	DNPW, University of Malawi, Mzuzu University, Malawi College of Forestry & Wildlife and Natural Resources College	2 years
	2.3 Activate and source funds to support an annual law enforcement and conflict resolution training programme in Malawi within three years	DNPW, EWT, Malawi Carnivore Conservation Regional Programme,	3 years
	2.4 Develop and implement one annual law enforcement and conflict training programme in Malawi within two years.	DNPW, PPF, IFAW, Malawi Carnivore Conservation Regional Programme, CAWS	2 years
3. Establish a network of programmes and institutions to develop capacity in research, monitoring, education	3.1 Create a database of institutions and programmes involved in research, monitoring, education and outreach within one year	DNPW, WESM, EWT, EAD, MCFW, UNIMA, MZUNI	1 year

and outreach within one year			
	3.2 Establish a committee to drive the development of a national capacity network within one year	DNPW	1 year
	3.3 Develop a web portal to provide an interface between network members and the public within one year	DNPW	1 year

Theme: Coexistence

Objective: Promote coexistence and manage/mitigate conflict between cheetah, wild dogs and people across Malawi

Target	Activity	Responsible parties	Time Frame
1.Substantially reduce levels of incidental mortality in cheetah and wild dogs in Malawi within five years.	1.1 Clarify and monitor extent of incidental mortality of cheetah and wild dogs in Malawi within three years	DNPW, WESM	3 years
	1.2 Substantially reduce snaring mortality of cheetah and wild dogs through initiatives such as anti-poaching efforts and community conservation, within five years	DNPW, WESM, NVA, USACOL, ESOM, CAWS, PPF, African Parks	5 years
	1.3 Where appropriate, initiate programmes known to be effective at managing diseases that threaten cheetah and wild dog population viability, within five years	DNPW,Agriculture (Livestock and Animal Health), EWT	5 years
	1.4 Implement targeted, enforceable programmes which reduce road mortality of cheetah and wild dog within five years	DNPW, Road traffic commission, Malawi Police service	5 years
	1.5 Identify and remove, as much as possible, sources of snare wire; ongoing	DNPW, WESM, NVA, USACOL, ESOM, CAWS, PPF, African	5 years (on-going)

		Parks	
	1.6 Promote and implement land use practices compatible with cheetah and wild dog conservation, within five years	DNPW, Agriculture, NVA, USACOL, Forestry	5 years
2. Raise awareness of issues related to cheetah and wild dog conservation among relevant stakeholders in Malawi within three/two years.	2.1 Develop and disseminate education and awareness material, building on best existing material, for both adults and children in Malawi within two years	DNPW, WESM, Ministry of Education, Print and electronic media	2 yearsw
	2.2 Create and implement multimedia programmes to raise awareness and understanding of cheetah and wild dog conservation in Malawi within two years	DNPW, WESM, Ministry of Education, Print and electronic media	2 years
	2.3 Sensitise leaders to the value of cheetah and wild dog conservation	DNPW, WESM	1 year (on going)
3. Measurably increase perceived intrinsic and economic value of cheetah and wild dogs to all stakeholders within five years	3.1 Quantify and monitor the perceived intrinsic and economic value of cheetah and wild dogs to all stakeholders	DNPW, EWT, Malawi Carnivore Conservation Regional Programme	5 years (ongoing)
	3.2 Develop appropriate value-added activities, such as tourism, in Malawi within five years.	DNPW, CAWS, African Parks, Tourism Board	5 years
	3.3 Investigate and highlight cultural values of cheetah and wild dogs across Malawi within two years	DNPW, NVA, USACOL	2 years
	3.4 Where relevant, develop self-sustaining community schemes that offset the costs of, and internalise the responsibilities for, conflict within three years.	DNPW, WESM, NVA, USACOL	3 years

	3.5 Where appropriate, develop income generation and capacity development projects linked to cheetah and wild dog conservation, within three years	DNPW, WESM, CAWS, Malawi Carnivore Conservation Regional Programme, NVA, USACOL	3 years
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Theme: Improving knowledge

Objective: Improve knowledge on the conservation biology and needs of wild dogs and cheetahs across Malawi

Target	Activity	Responsible parties	Time Frame
1. Generate and disseminate standardised, quantitative knowledge of conflict, threats and their drivers and mitigation across southern Africa within five years	1.1 Compile available data on conflict, threats and their mitigation and, where possible, collate in standardised formats, from all range states within two years.	DNPW	2013
	1.2 Identify shortfalls in existing knowledge about conflict, threats and their mitigation for all range states within two years	DNPW	2013
	1.3 Initiate studies (field studies, surveys, questionnaires and existing data) to quantify conflict, threats, their drivers and mitigation, and effects on population viability; ongoing	DNPW, Regional Programme, WESM	End of 2014
	1.4 Organise and hold a workshop to collate national information on conflict, threats and their mitigation within two years	DNPW and Regional Programme	2013
	1.5 Create a regional database of information on conflict, threats and their mitigation for southern Africa within three years	DNPW, Regional Programme, African Parks Network	2013

	1.6 Generate knowledge on present and emerging threats to cheetah and wild dog conservation, including illegal trade		
	1.7 Disseminate knowledge regarding conflict, threats, their drivers and mitigation to all relevant stakeholders within five years	DNPW	2013
2. Identify and evaluate the efficacy of various mitigation measures (including cost-benefit analysis of techniques) within five years	2.1 Initiate multiple studies across the region on the efficiency of various mitigation measures and their cost-benefit ratios; ongoing	DNPW	2015
	2.2 Collate and analyse all data from above in consultation with involved parties	DNPW	2015
3. Gain better understanding of dispersal, habitat use and connectivity for cheetah and wild dogs within five years	3.1 Initiate field studies on dispersal mechanisms in both species, including factors influencing dispersal success, within five years.	DNPW, African Parks, Regional Programme, EWT	2015
	3.2 Initiate studies on cheetah and wild dogs feeding ecology in different areas in relation to potential range within five years	DNPW, EWT, Regional Programme	2015

Theme: Information transfer

Objective: Develop and implement mechanisms for the transfer of information relevant to cheetah and wild dog conservation and ensure active commitment of stakeholders.

Target	Activity	Responsible parties	Time Frame
1. Identify relevant benefits to local communities, government and landowners within five years	1.1 Conduct literature review to consolidate information on potential benefits of cheetah and wild dog conservation across the country within one year	Regional Programme, DNPW	2012
	1.2 Hold meetings and workshops	DNPW, Regional	2012

	with communities, then landowners, then government, to collect information to identify relevant incentives and benefits	Programme, WESM	
2. Develop multimedia projects in Malawi, building on the best existing material, within five years	2.1 Develop web based interactive reporting of sightings, data, findings and activities relevant to cheetah and wild dog conservation	DNPW, WESM, ESOM	2014
	2.2 Use posters, leaflets, radio, TV, video, pictures and theatre groups} to disseminate information locally within two years.	DNPW, WESM, TLC	ongoing
	2.3 Develop and distribute standardised forms across range states to collect information on cheetah and wild dog distribution, especially in areas where information gaps occur, within three years		3 years
3. Promote national awareness of local threats in Malawi within five years	3.1 Establish competitions, essays, etc. in schools and groups to enhance and highlight conservation education	DNPW, WESM, ESOM	ongoing
	3.2 Develop curricula regarding cheetah and wild dogs and integrate with activities of youth conservation clubs (e.g. Chongololo in Zambia, Malihai in Tanzania and Wildlife Club in Botswana).	DNPW, MCFW, WESM, Ministry of Education, ESOM	2015
	3.3 Encourage sponsorship of sports teams, clubs and groups named after cheetah and wild dogs at all levels		

Theme: Land development and land use

Objective: Minimise adverse effects of land development and promote implementation of best land use practice for cheetah and wild dog conservation in Malawi

Target	Activity	Responsible parties	Time Frame
1. Evaluate current land use and assess how these relate to cheetah and wild dog conservation by identifying determinants of success, within two years	1.1 Identify key national and local (regional) stakeholders responsible for determining current and future land use strategies	DNPW	1 year
	1.2 Produce a national document illustrating examples of land use strategies associated with successful cheetah and wild dog conservation	DNPW	2 years
2. Promote wildlife based land uses, multi-owner wildlife management units, and community based natural resource management in areas with potential for cheetah and wild dog conservation within four years	2.1 Identify areas with the greatest potential for wildlife based land uses conducive to cheetah and wild dog conservation in Malawi within a year	DNPW	1 year
	2.2 Develop national feasibility studies leading to business plans to help achieve the development of wildlife areas to benefit cheetahs, wild dogs and communities, within three years	DNPW/Consultant	2 years
	2.3 Prepare funding proposals to	DNPW/Consultant	1 year

	implement the business plans within one year after their development, i.e. within four years		
	2.4 Monitor the development of wildlife based land uses, and their influence on cheetah and wild dog conservation, ongoing.	DNPW/WESM	On going
	2.5 Achieve a 20% increase in the area of community land used for wildlife based land uses within ten years	DNPW/Local Government	10 years
	2.6 Gain consensus on minimum required size of game farms, multi owner land management units and community conservation areas etc. for effective cheetah and wild dog conservation, within one year	DNPW	1 year
	2.7 Develop an information booklet detailing multi owner land management units models and illustrating the potential benefits of multi owner land management units to commercial and communal landholders compared with government protected areas (game fenced farms) within one year.		1 year
	2.8 Identify key role players in Malawi able to drive the development of multi-owner wildlife management units, within one year	DNPW	1 year
	2.9 Initiate national lobbying efforts to promote the development of multi-owner wildlife management units, targeted at key landholders and government representatives, within two years	DNPW	2 years

3. Promote effective livestock husbandry and range management; ongoing.	3.1 Develop and expand current programmes throughout the country and source more funding within a year	DNPW/Agriculture	1 year
	3.2 Promote such programmes through existing agricultural, game ranching and community organisations within six months of development of those programmes, i.e. within 18 months	DNPW/Agriculture	One and a half years
	3.3 Initiate training programmes through accredited training facilities to increase the capacity of communities to practice responsible and sustainable range management; initiate within one year, ongoing thereafter	DNPW/Agriculture	1 year
	3.4 Assess the effectiveness of new and existing livestock husbandry and range management programmes and disseminate results; ongoing	DNPW/Agriculture	On going

Theme: Policy and legislation

Objective: Review and, where necessary, revise, national and local legislation and policies affecting cheetah and wild dog conservation in Malawi

Target	Activity	Responsible parties	Time Frame
1. Review of the relevance and efficacy of current national, policies and legislation pertaining to the conservation of cheetah and wild dogs, including trade in captive	1.1 DNPW to mobilise resources to carry out an assessment of policies and legislation, compile recommendations and submit to Judiciary within 18 months	DNPW	18 months

animals, within 5 years			
	1.2 DNPW to make a follow up with Ministry Of Justice on progress to ensure that the legislation and policies are approved/enacted within 3 years	DNPW, Ministry of Justice	3 years
	1.3 Increase information exchange amongst stakeholders and the neighbouring countries in cheetah and wild dogs trafficking to be monitored by DNPW, Police, MRA and Immigration, an ongoing activity	DNPW, MRA and Immigration, Police	On going
2. Improve the capacity of law enforcement and judicial agencies to implement legislation and policies relevant to cheetah and wild dog conservation within seven years	2.1 DNPW to prioritise capacity needs to implement legislation and policies relevant to cheetah and wild dog conservation within six months	DNPW	6 months
	2.2 DNPW to mobilise resources required to improve capacity within year.	DNPW	1 year
	2.3 DNPW to develop capacity according to its priorities within five years.	DNPW	5 years
3. Attain effective communication and collaboration between all relevant law enforcement and wildlife management agencies within Malawi within five years	3.1 DNPW to hold national workshops, with all relevant NGOs and government agencies involved in law enforcement present, within one year	DNPW, relevant NGOs	1 year
	3.2 DNPW to set up national fora to meet regularly every year, starting	DNPW	1 year

	within one year		
	3.3 Participate in regional forum of law enforcement agencies and NGOs to meet annually; ongoing	Law enforcement agencies, NGOs	ongoing
	3.4 DNPW to adopt reporting mechanisms and strategies to deal with problem animal control, within one year	DNPW	1 year

Theme: Political commitment

Objective: Enhance political commitment to the conservation needs of cheetah and wild dogs in Malawi

Target	Activity	Responsible parties	Time Frame
1. Sign a regional agreement to collaborate in conserving cheetah and wild dogs across southern Africa when ready and appropriate for Malawi	1.1 Meeting convened by DNPW to scrutinise the regional agreement within six months	DNPW	6 months
	1.2 DNPW to submit the regional agreement to the minister for endorsement within six months	DNPW	6 months
	1.3 The ministry to attend a regional state meeting where agreement will be formally signed by the eight countries within one year	Ministry (which one?)	1 year
2. Ensure that any outstanding transboundary agreements that will benefit the conservation of cheetah and wild dogs are signed within 2 years	2.1 DNPW and PPF to identify all outstanding agreements that will benefit cheetah and wild dogs within three months	DNPW, PPF	3 months
	2.2 DNPW to lobby for agreements to be signed by mobilising stakeholders and relevant government bodies, within nine	DNPW	9 months

	months		
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Theme: Implementation

Objective: Implement the national action plan for the conservation of cheetah and wild dog in Malawi.

Target	Activity	Responsible parties	Time Frame
1. Endorse and implement the national action conservation action plan over ten years	1.1 Edit, review and publish national workshop report	DNPW, Regional coordinator	6 months
	1.2 Endorse national conservation action plan	DNPW	6 months
	1.3 Disseminate national conservation action plan to stakeholders in Malawi	DNPW, National coordinator	1 year
	1.4 Identify and appoint a national coordinator for the implementation of the plan	DNPW (with assistance from all stakeholders)	Immediately

Theme: Population restoration

Objective: Restore populations of cheetah and wild dog in Malawi, wherever possible within historical range.

Target	Activity	Responsible parties	Time Frame
1. Identify suitable natural areas for restoration by end of 2011	1.1 Convene a stakeholders meeting to identify suitable natural areas for restoration of cheetah and wild dog.	DNPW	May, 2011
	1.2 Document results of meeting	Regional Program coordinator	June, 2011
2. Sensitize all stakeholders and gain their support and commitment by end of 2012	2.1 Identify and select important stakeholders	DNPW	October, 2011

	2.2 Invite selected stakeholders to a round table discussion	DNPW and WESM	November,2011
	2.3 Disseminate information through print and electronic media	WESM	Decemberr,2011
	2.4 Monitor and evaluate support and commitment of stakeholders	DNPW and WESM	June, 2012
3. Improve capacity for restoration and protection of cheetah, wild dog and prey species by 2013	3.1 Carry out training needs assessment	DNPW	February, 2012
	3.2 Design a training program	DNPW & Regional Coordinator	September, 2012
	3.3 Organize and run a training course	DNPW	November, 2012
	3.4 Draw up a capture and release strategy	DNPW & Regional Coordinator	February, 2013
	3.5 Plan and intensify law enforcement	DNPW	August, 2011
	3.6 Strengthen the perimeter fences	DNPW	September, 2011
	3.7 Establish a long term monitoring and evaluation program for cheetah and wild dog	DNPW	July, 2011 and ongoing
4. Increase trans boundary and inter agency collaboration with respect to cheetah and wild dog conservation by 2012	4.1 Organize bi lateral meetings, discussions and cross border joint activities	DNPW	July, 2011
5. Source adequate and	5.1 Write proposals and submit to potential donors	DNPW and Regional Program Coordinator	August, 2011

sustainable financial support within five years			
	5.2 Lobby government to increase DNPW financial allocation	DNPW and WESM	August, 2011
	5.3 Establish a cheetah and wild dog conservation fund	DNPW and WESM	July, 2013