

# KAFUE CARNIVORE PROJECT

## 2011 ANNUAL REPORT



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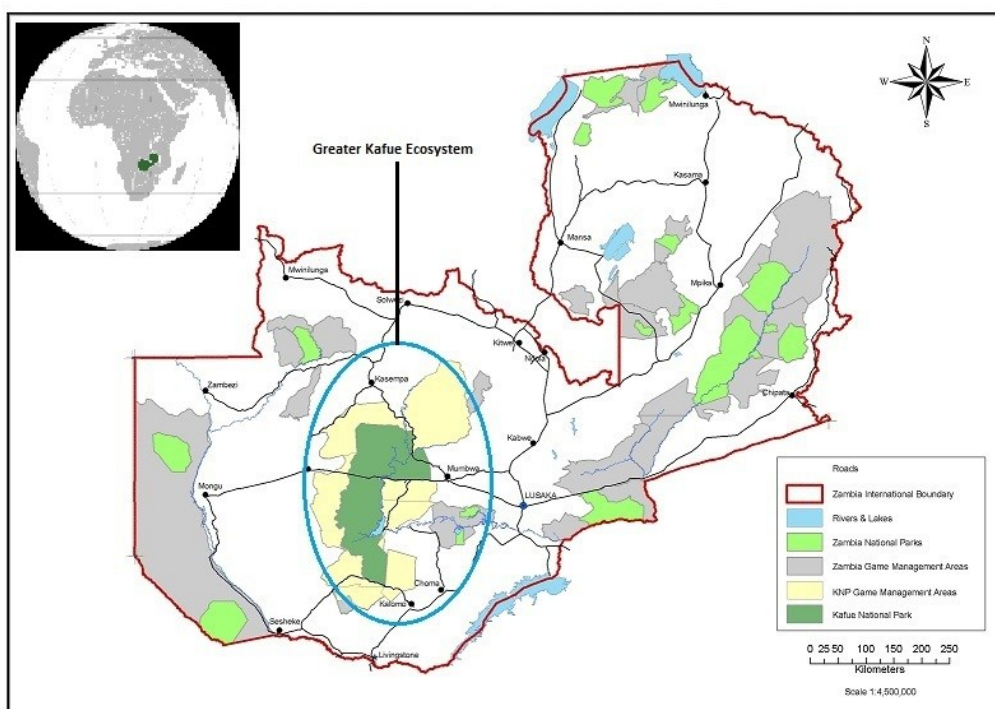
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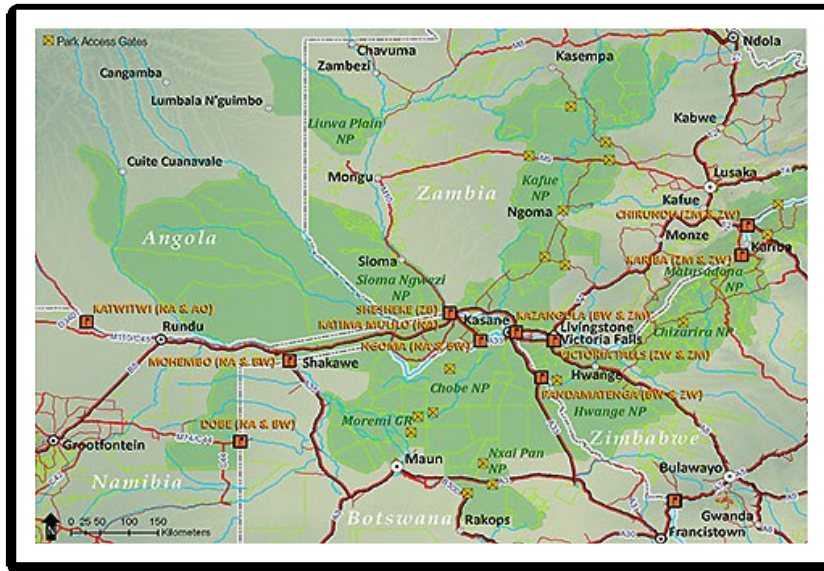


## Summary

Because of their inherently low densities, wide-ranging behaviour, and susceptibility to edge effects, large carnivores such as African wild dogs (*Lycaon pictus*) and cheetah (*Acinonyx jubatus*) typically require immense tracts of land in order to maintain viable populations (IUCN, 1997), yet with ever-increasing human pressure on natural resources such areas are extremely rare, both in Africa and worldwide.

[Kafue National Park](#) (KNP), “Zambia’s Huge Hidden Gem”, is the largest wildlife area in Zambia and the 2<sup>nd</sup> largest National Park in Africa. When including the adjacent Game Management Areas (GMA’s) this vast and unfenced wilderness area comprises one of the greatest intact ecosystems in Africa, covering >67,000km<sup>2</sup> (Map 1). The Greater Kafue Ecosystem (GKE) provides the most significant block of transboundary connectivity to wildlife populations in Namibia, Angola, Botswana and Zimbabwe through the [Kavango-Zambezi Transfrontier Conservation Area](#) (KAZA TFCA) initiative incorporating c.280,000km<sup>2</sup> of protected areas and associated wildlife managed areas (Map 2). This is the world’s largest terrestrial conservation network – about the size of Italy. Emphasising the value of this area to the long term viability of African wild dog and cheetah, and the value of African wild dog and cheetah to the promotion of the KAZA TFCA, Regional Governments, the [IUCN Canid and Felid Specialist Groups](#), the [Zambia Wildlife Authority](#) and private sector stakeholders have recently signed the agreement to link these area, and thus these iconic species for conservation research and management.





**Map 2: The Greater Kafue Ecosystem and the Kavango-Zambezi Transfrontier Conservation Area**

Both African wild dogs and cheetah occur throughout the GKE, potentially in abundance, making it a critical area for national and regionwide conservation efforts. Nevertheless, since inception of KNP in 1950 there has been no formal research and virtually no current data exists on the status, distribution, limiting factors and threats to these iconic and ecologically important species. Such a void exists in large part due to the formidable financial and logistical challenges that face anyone attempting to conduct such work in what has historically been a remote wilderness.

Following the development of a Regionwide Conservation Strategy for Cheetah and African wild dog the ZAWA identified KNP as a priority area for research and management of both species.

Subsequent proposals to initiate a first-of-its-kind, intensive long-term ecological study of African wild dogs and cheetahs and their habitat throughout the Greater Kafue Ecosystem to determine and document their conservation status were drafted by the Zambian Carnivore Programme (ZCP) in collaboration with the ZAWA. Permits to undertake research granted by the ZAWA on 25<sup>th</sup> November 2010.

The Kafue Carnivore Project hit the ground following cessation of the rains in May 2011 as the latest component of Zambian Carnivore Programme's national carnivore conservation initiative. The project is managed by Robin Lines, a conservation biologist with 15yrs experience in project development and management, and his partner, Dr Ana Maria Puerta, a wildlife veterinarian.

Main goals in 2011 were:

1. Setting up of an equipped and operational field base;
2. Developing working relationships with local ZAWA staff and private sector stakeholders;
3. Initiating an annual photo census of African wild dog and cheetah;
4. Developing a study population of collared individuals;
5. Initiating investigations into human-induced impacts on large carnivores.



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## Outcomes

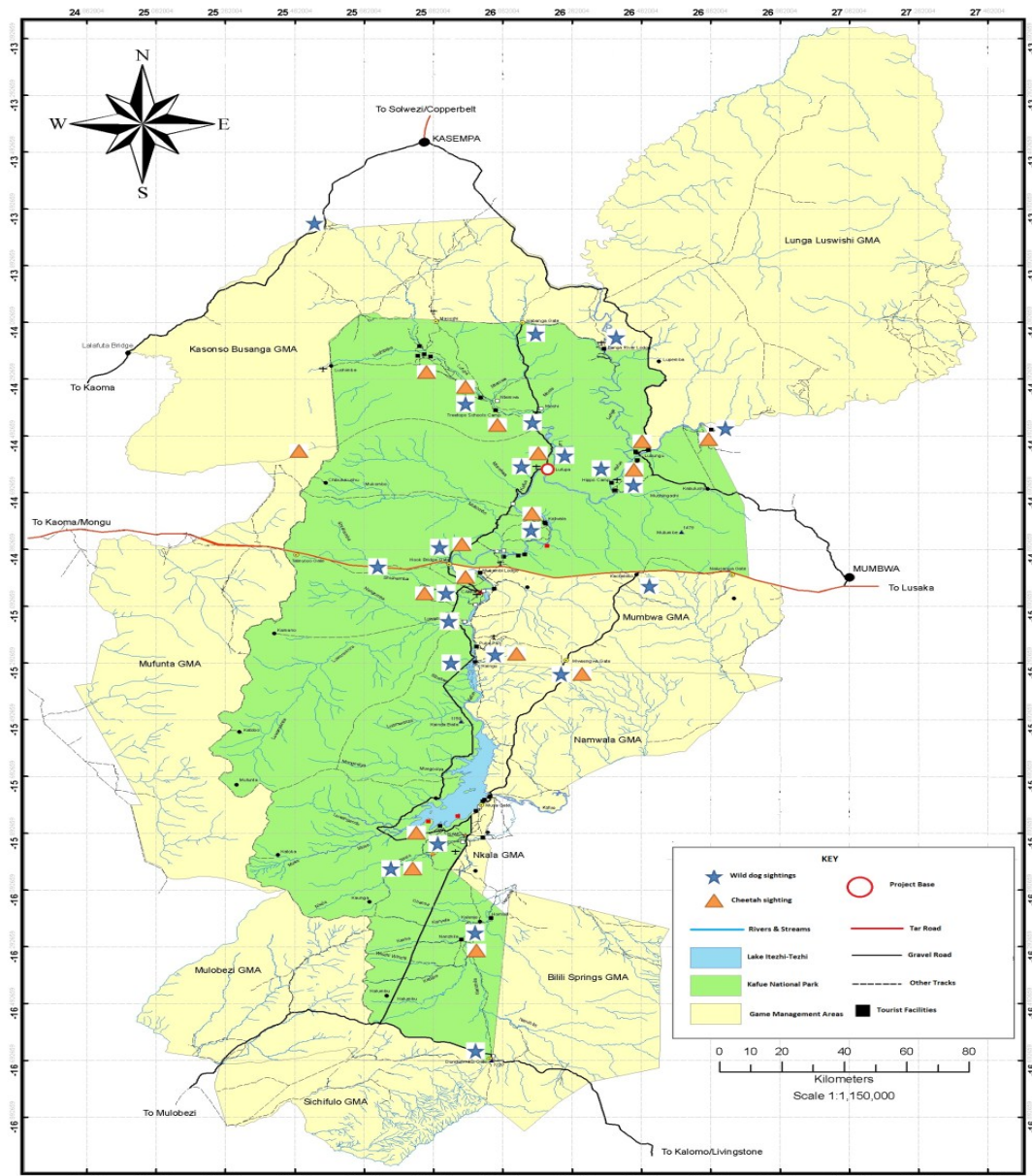
### Operations

The project has based itself out of the Lufupa Camp in central northern Kafue with generous logistical support from the local tour operator Wilderness Safaris.

### Stakeholder Relations

Introduction to senior ZAWA staff including the Regional Manager, Area Manager and Senior Ecologist were undertaken early in field activities, and regular feedback on project activities continues with monthly field reports submitted for evaluation and feedback. Project staff also undertook presentations to ZAWA Wildlife Police Officers on proposed activities together with general information on carnivore conservation.

Project staff visited 15 commercial tour operators across northern and southern KNP in 2011, by way of an introduction and publicity for project activities and the photo census. Regular communications continue with project updates and data collection on sightings.



**Map 3: Areas of confirmed cheetah and African wild dog sightings, 2011**

### Photo Census

Sightings of both cheetah and African wild dog were reported at all the major tourism camps and KNP gates visited by project staff in 2011, with identified individuals and groups shown on Map 3.

### African wild dog

In the first 6 months the photo census provided 65 independent confirmed sightings of African wild dog throughout both northern (58 sightings) and southern section (7 sightings). The significant bias towards the central/northern section reflects the higher level of both project and tourist activity.

In total 136 individuals (adults & yearlings) in 13 packs and dispersing groups were identified, with another 2-4 packs reported but without photographic evidence. These preliminary results suggest we will likely reach and exceed the existing estimate of 200 individuals for the entire GKE by 2012. Seasonal breeding was also widespread indicating resident packs, with the exception of the Lufupa pack which was observed mating in April (unsuccessfully), and then observed with 3 new pack members in October (2M, 1F) with the existing alpha female heavily pregnant. Asynchronous breeding in established and/or undisturbed populations is rarely recorded, and typically coincides with lower pup survival rates. No sightings have been reported of this group since start of the rains to confirm pup survival.

PACK ID	# ♂ photo	# ♀ photo	Unsexed photos	non-ID	# in Sighting	Breeding in 2011
Chunga	4	3	0	0	7	Yes
Lufupa	6	2	0	0	8	Yes
Musekwa	0	3	0	0	3	No
Treetops	4	2	2	0	8	Yes
Hook Bridge	8	7	2	2	19	Yes
Itezi Rd	2	1	1	4	8	Unknown
Hippo	4	6	2	3	15	Unknown
Kafwala	4	2	0	0	6	Yes
West tar	0	0	3	4	7	Yes
Kelenje	0	1	6	8	15	Unknown
Konkamoyo	3	4	1	0	8	Yes
Nanzilla	0	0	0	19	19	Unknown
Puku pan	4	2	6	1	13	Yes
<b>TOTAL</b>	<b>39</b>	<b>33</b>	<b>23</b>	<b>44</b>	<b>136</b>	

Figure 1: GKE African wild dog packs by end Nov 2011, n=65 sightings

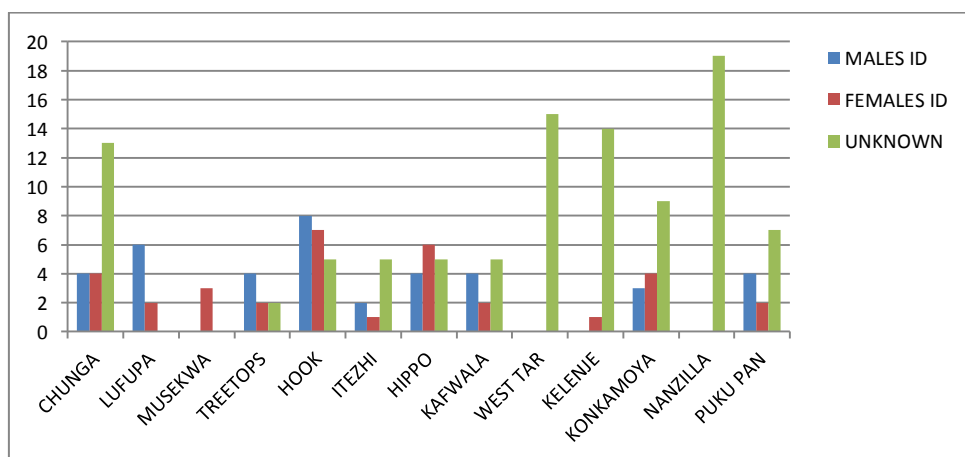


Figure 2: Group size & sex ratios of known adult African wild dog packs (M:F = 1.15:1)

## Cheetah

In addition we have positively identified 23 cheetah from 60 sightings, including multiple incidents of dependants indicating localised breeding and resident animals. As with the African wild dog we picked up reliable records of presence wherever we undertook discussions and interviews, both inside KNP and in the adjacent GMA's. An estimate of 20-50 cheetah for the GKE is very obviously a significant underestimate, and we are confident that the GKE will reveal itself as one of the continent's most important refuges for cheetah, as with the African wild dog.

Group / ID	#♂ photo	#♀ photo	Unknown	Dependants
BUNSANGA	3	0	0	n/a
KAFWALA	0	1	0	No
KAFWALA 2	0	1	0	No
MUSHAGASHI	1	0	0	n/a
LUF-KABONKA	1	1	0	Yes
RIVER LOOP	0	1	0	No
MUKAMBI	2	0	0	n/a
MUKAMBI 2	0	1	3	Yes
MUSEKWA	0	0	2	Yes
LUFUPA	2	0	0	n/a
MUZANSA	0	1	1	Yes
PUKU PAN	0	0	2	Unknown
<b>Total</b>	<b>9</b>	<b>6</b>	<b>8</b>	

Figure 3: GKE cheetah records in 2011, n=60 sightings

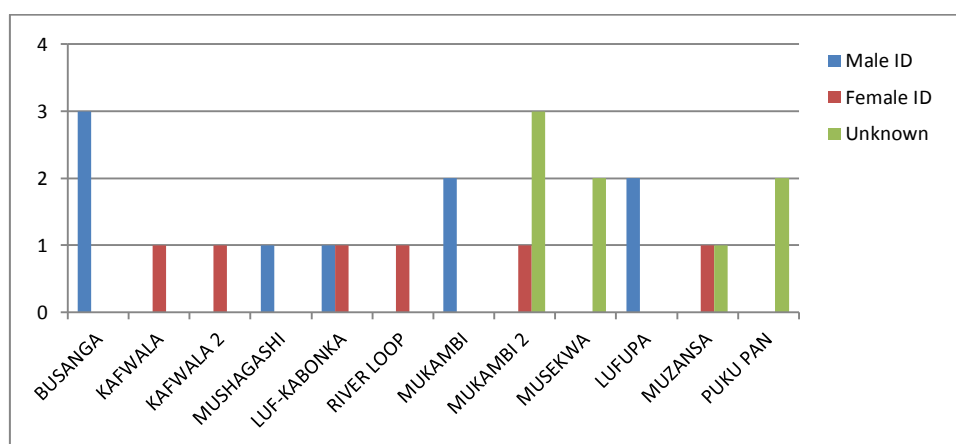


Figure 4: Group size & sex ratios of known adult cheetah (M:F = 1.5:1)

### Developing a study population of collared individuals

VHF collars were initially chosen for their cost effective and reliable operational characteristics when used in conjunction with direct observational field techniques considered most appropriate for studies of this type. Augmentation with GPS/Satellite collars will be implemented when a baseline is established on ranging ecology using established VHF/aerial monitoring methods.

Two adult cheetah (1M, 1F) were collared in 2011 in the northern section of KNP. We believe these to be the first free-ranging cheetah captured for intensive direct observational studies in Zambia. Both operations were under the management of Dr Becker (registered to dart with the Department of Veterinary Services and Livestock), and were also conducted in the company of ZAWA scouts. Both animals recovered promptly

and were observed repeatedly until the rains precluded road tracking. Additional flights are planned for the wet season period to maintain contact and ascertain locations.



Figure 5: KC1 immobilised and following recovery, Lufupa area

No African wild dogs have been captured as yet due to the problematic nature of having locally registered vets or darting personal present when sightings occur. The project is working towards the registration of Dr Puerta for 2012, whereby multiple packs and additional cheetah will be collared for monitoring more efficiently.

### Initiating investigations into human-induced impacts on large carnivores

Snaring, poisoning, shooting and collisions with vehicles have clearly been demonstrated to exert significant negative pressure on many large carnivore species, undermining breeding and hunting success, population viability and even resulting in localised extinctions.

To combat these threats we collect data on injuries and mortalities to inform management. Where snared animals are observed we have endeavoured to bring in a registered vet, and assisted with capture and treatment. In 2011 a total of 5 adult lions were treated for snare injuries, saving limbs and/or their lives.

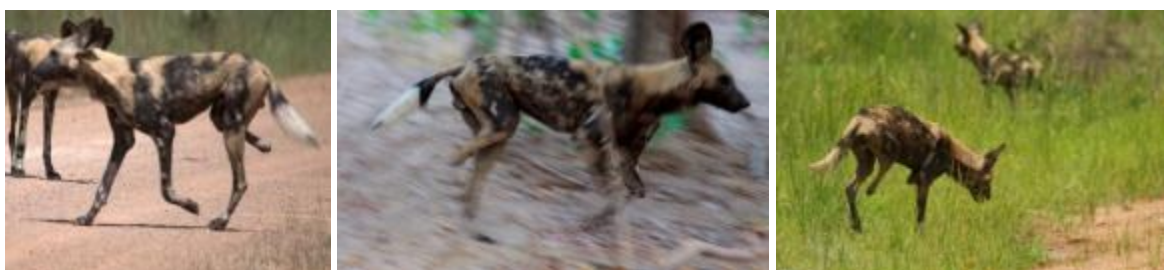


Figure 6: Chunga male with single amputation in Feb 2011, photographed again with a 2<sup>nd</sup> amputation in Oct 2011 and again almost a year on in Jan 2012



Figure 7: Common cable-type snare wound found on a lioness, and Dr Kamboyi of ZAWA treating the wound with assistance from project staff

Species	Injury type		Confirmed mortality	Unknown outcome
	# snared animals observed (treated)	Road collision		
Lion	7 (5)	-	1	1
Cheetah	1	-	1	-
African wild dog	2	1	1	2
Spotted hyaena	1	-	-	1
Elephant	1	-	-	1
<b>Total</b>	<b>10 (5)</b>	<b>1</b>	<b>3</b>	<b>5</b>

Figure 8: Summary of human impacts on wildlife recorded by project staff in 2011

### 2012 Activities, given suitable funding:

- Expand the photo census to include ZAWA staff patrolling off-road as part of the ZCP emphasis on training and support local staff in research and monitoring skills;
- Undertake a community survey of human-wildlife conflict, and presence / absence of cheetah and wild dog throughout the GKE;
- Expand our collared study population of both species focusing on identifying limiting factors and threats, predator-prey relations, density, distribution, immigration/emigration, and survival and reproductive rates;
- Expand our capacity to provide emergency treatment to snared wildlife and provide field training to veterinary undergraduates in wildlife medicine;\*
- Support local undergraduate student with field studies;
- Initiate environmental education courses for the local school children in and around the northern section of KNP in collaboration with Treetops EE centre.

\*given veterinary registration for Dr Puerta

### Sponsors and Field Support

The Kafue Carnivore Project would like to thank the following organisations, individuals and sponsors for operational and field support in 2011:

ZAWA staff of KNP, [Mukambi Lodge](#), [McBrides Camp](#), [Kafue Private Operators Association](#), [Open Africa](#), [Kafue Trust](#), [Cymot](#).

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