



African Wildlife Conservation Fund



Zimbabwe Wild Dog Project 2008 Funding Report

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Introduction



The Rufford Foundation kindly supported the expansion of the Zimbabwe Wild Dog Project (ZWDP) to the whole of the Zimbabwean part of the Greater Limpopo Transfrontier Conservation Area (GLTFCA). Work has continued in the Savé Valley Conservancy (ZWDP's focal study area), but also expanded to other areas within the GLTFCA, and this report outlines the activities and achievements of the project to date.

African wild dogs are sub-Saharan Africa's most endangered large carnivore with only an estimated 3000 to 5500 individuals left in the wild (Woodroffe, Ginsberg & Macdonald 1997). The Savé Valley Conservancy, a 3487km² conservation area in Zimbabwe's southeast lowveld, has one of the highest densities of wild dogs in the world, and is therefore an important study site for increasing our understanding of the conservation status, trends, and threats to this remarkable species, and for the development of more effective conservation tools.

The wild dog populations in the rest of the GLTFCA are potentially just as important, but very little is known about them. It is likely however, that the wild dogs are threatened by a variety of factors including poaching, disease, habitat fragmentation, human persecution and competition from other predators. ZWDP seeks, among other goals, to assess the relative impact of these different threats to the wild dog population throughout the GLTFCA and in SVC in particular.

The detailed objectives of the project and the results to date are given below: all aspects of the project are ongoing.

Research questions and results to date

1) What is the distribution and status of wild dogs in the Zimbabwean Part of the GLTFCA?

Proposed methodologies: a) Locate dens of each pack during denning season and use observers and motion-sensing photography to count wild dogs and identify individuals. b) Questionnaire surveys to determine the presence/absence of wild dogs. c) A campaign to collect photographs of individual wild dogs throughout the GLTFCA aiming to identify individuals and distinguish between different packs.

Achievements and current status: Within the SVC, during the 2008 denning season we located six dens, and installed motion-sensing cameras at several denning sites enabling us to build a substantial photographic database for individual identification of SVC's wild dogs.

Moreover, this database in combination with other observer information has enabled us to ascertain that there are approximately 130 wild dogs currently in the SVC. We have interviewed ranch managers and scouts to ascertain the presence/absence and numbers estimates for given areas of the SVC and in addition interview data is currently being gathered in communal areas adjacent to the SVC as well as areas currently occupied by war veterans as part of Zimbabwe's resettlement movement.

We have also made headway this year with the expansion of our project into the Gonarezhou National Park (GNP), although this work is still in its early stages. A large carnivore spoor survey is planned in the park for April 2009, to assess the abundance and distribution of wild dog packs as well as other large carnivores. On reconnaissance visits, we have done some preliminary assessment of the suitability of different areas and road networks within the GNP for spoor transects, and we will be working in collaboration with the Frankfurt Zoological Society, who currently have a management contract with the GNP. The resulting data will be useful baseline data from which to begin to establish population trends of wild dogs in the GNP.

With respect to the remainder of the GLTFCA, we have been gathering background information in the form of GIS shape files and mapping imagery for other conservancies and information from the French agricultural organization CIRAD (French Agricultural Research Centre for International Development) regarding the regional distribution of land use types in the Zimbabwean part of the GLTFCA.

Our campaign to collect photographs in other parts of the GLTFCA has thus far been concentrated in the Gonarezhou National Park and Malilangwe Game Reserve, where we have distributed posters requesting sighting reports and wild dog photographs from visiting tourists, and requested that scouts and rangers record and report any wild dog sightings.

Wild dogs in Gonarezhou National Park, January 2008. Photo sent in by tourists



Information gathered so far suggests the existence of at least 2 large packs and 1 small pack in Gonarezhou National Park, and one pack (comprising 11 individuals) in Malilangwe Game Reserve. We are still working on photographic identification of all these dogs to see if we can tell where they came from to increase our understanding of population connectivity within the GLTFCA.

2. To what extent are sub-populations within the Zimbabwean part of the GLTFCA population connected, and to what extent is the Zimbabwean population connected with populations in South Africa?

Proposed methodologies: Wherever possible, wild dogs will be photographed and an identification database compiled. A photographic census of the Kruger National Park (KNP) wild dog population was carried out in 2008 and all photographs collected on the Zimbabwean side will be compared with those collected from KNP and those collected from the nearby Limpopo Valley.

This information will be used to determine the extent of connectivity between sub-populations within Zimbabwe, and between Zimbabwe and South Africa. Furthermore, this information will shed further light on the extent of the ability of wild dogs to disperse across highly modified landscapes.

Achievements and current status: The database of photos gathered for the SVC this denning season is substantial (76 individual dogs identified and documented), and as we accumulate data from the photographic campaign in the GNP and other areas, we will be able to begin to analyze the extent of connectivity between the SVC's wild dogs and populations in other conservancies. We also have photographic ID's of a pack of 14 dogs in Gonarezhou National Park and of the 11 in Malilangwe.

Monitoring of movements of wild dogs between conservation areas using reports from local managers continues. We are working in collaboration with the Endangered Wildlife Trust in South Africa, frequently exchanging photos and building photographic databases, although, in the absence of photographic matches, to date evidence has not arisen indicating transfrontier movement of wild dogs in the GLTFCA. Nonetheless, wild dogs have been documented moving up to 250km (Fuller *et. al.* 1992; H. Davies-Mostert, *pers. comm.*), so such trans-border movement is highly possible, and we expect to document evidence for this as the project progresses.

3. What are the key conservation threats affecting the Zimbabwean portion of the GLTFCA wild dog population?

Proposed methodologies: Following identification of strongholds for wild dogs within the GLTFCA, in each area, the following will be assessed with the use of a survey: a) Current land use and trends in land use b) The status of populations of wild ungulates c) The prevalence of bush-meat snaring d) Extent of protection of wildlife populations, and whether that is likely to change in the near future e) The extent and patterns of human settlement in the area f) The extent to which domestic dogs occur. Carnivore spoor surveys will be used to estimate lion and hyena populations.

Achievements and current status: One of our important co-projects is a bush-meat and poaching study which addresses many aspects of the conservation threats affecting wild dogs (by-catch in snares is the highest cause of mortality recorded). This study is designed to investigate the impacts of the illegal bush-meat trade on wildlife populations, the dynamics and causes of the bush-meat trade, and potential solutions to address the problem. To obtain data, a system has been set up to systematically gather data regarding poaching within the SVC through requesting that scouts detail and report each poaching-related encounter, and this data is collected and analyzed on a monthly basis. Some findings of this ongoing study are discussed in the next section. An aerial survey has been completed in the Savé Valley Conservancy and Gonarezhou National Park to estimate prey populations. The second annual carnivore spoor survey was carried out in October 2008 to assess lion and hyena populations.

GIS data from CIRAD (already collated) will be used to assess the threats from land use-changes, as will broad-scale vegetation/land-use surveys. A questionnaire survey has been carried out (sample size so far = 159 households in 4 villages in 2 districts), to investigate attitudes to wild dogs and other predators, numbers of domestic dogs and current land use and future land-use plans.

Focal population: Savé Valley Conservancy

Research questions

1. What is the population status and population trajectory in SVC?
2. What is the impact of snaring on wild dogs in SVC?
3. What is the risk and impact of disease on wild dogs in SVC?
4. How does habitat fragmentation and prey depletion affect the ecology and conservation of wild dogs in SVC?
5. What is the impact of re-colonization of the area by lions on the behavioral ecology and conservation of the wild dog population?

Proposed methodologies: The population status of wild dogs in SVC will be assessed using two methods: a) locating every den each year using trackers with 12 years experience of tracking wild dogs in SVC; b) identifying every individual in the population using photographic records. Detailed field research will be conducted on the behavioral ecology of wild dogs within SVC to permit investigation into: a) home range sizes and distribution relative to relevant variables (e.g., modified habitat, domestic dog and lion distribution, snaring hotspots); b) diet; c) habitat use; d) life history and survivorship (e.g., pack sizes, litter sizes, adult and infant survivorship, etc). At least two individuals in as many packs as possible will be radio collared, using a combination of VHF and remote download GPS collars to provide detailed spatial information.

Pole (1996) conducted a detailed study into the ecology of wild dogs in the area prior to the land reform program and prior to the re-colonization of the area by lions. By using his data as a benchmark, we will be able to assess the impact of these changes.

Current status and achievements: Six dens were located in the SVC during the 2008 denning season. Observations at these sites and other sightings of the dogs enabled us to build a photographic database of 76 wild dog individuals including some of this year's pups. With a precise understanding of which individuals belong in particular packs, it becomes possible for us to follow individual life histories and gather data regarding population size and trajectory, in addition to more detailed measures including pack sizes, litter sizes, causes of mortality, adult and infant survivorship, and so on.

Locating these dens also facilitated the fitting of five new collars, meaning that at the end of the denning season we had 7 wild dogs collared in 4 different packs. We have four collars remaining to be fitted, and we are awaiting darting opportunities, which tend to be infrequent outside the denning season. Of the five recently fitted collars, two have since been recovered; one GPS collar and one VHF collar from dogs in different packs that were killed in snares set by poachers. Although disappointing from both a conservation and research perspective (the collars were only able to provide about two and three months' data respectively) the fact that 2 of our 7 collared wild dogs were killed in snares in the last 2 months is important mortality data and reinforces the significance of poaching as a conservation threat.

Sandy's carcass (snared) – Oct 08



Dr Rosemary Groom retrieving a hidden VHF collar from a poachers den, after the dog was killed in a snare



Data continues to be gathered to increase our understanding of the behavioral ecology of wild dogs. When the GPS collars are removed next denning season, the data we get from them will allow us to begin to assess more precisely the home ranges and core areas of the packs, in addition to their habitat use. We are also collecting faecal samples at every opportunity to gain insight into the diet of SVC's wild dogs.

The impact of snaring on wild dogs in the SVC has been investigated as part of our bush-meat study. In addition to 4 out of 5 known wild dog deaths in SVC within the last 6 months being confirmed snare mortalities, the bush-meat study provides important indications regarding the alarming impact of poaching and resulting depletion of prey in the SVC.

Between August 2005 and May 2008 there was an absolute minimum of the following illegal hunting incidents in the SVC:

- 3,974 poaching incidents
- 2,235 animals killed
- 28,656 snares recovered
- 1,522 poachers caught
- 931 poachers' dogs shot

These figures include only those incidents discovered and recorded, and therefore almost certainly conceal much higher actual figures.

Poaching rates were found to be distinctly worse in the south of the SVC which correlates with land resettled by war veterans and much lower densities of wild dogs. Moreover, poaching was found to have a major ecological impact. In resettled areas previously part of the SVC, there has been an almost complete loss of wildlife. Wildebeest, waterbuck, warthog, kudu, zebra, eland, giraffe and even impala are all on the decline in the south of the SVC, often dramatically, with the following changes in the last year alone:

Table 1 The decline of herbivore species in south SVC in one year (2007-2008)

Species	Changes in population 2007-2008 (%)
Eland	-65%
Warthog	-45%
Kudu	-39%
Impala	-38%
Zebra	-26%
Giraffe	-25%
Waterbuck	-23%
Wildebeest	-9%

Zebra, kudu, warthog, sable and waterbuck are all predicted to decline significantly over the next fifteen years if current trends continue, with the warthog (a species that suffers particularly from poaching) projected to become locally extinct in a mere seven years, and the kudu extinct in SVC in 11 years. This will have severe implications for the wild dogs, through a depletion of their prey.

Regarding the risk and impact of disease on wild dogs in SVC, we continue to gather mortality data which is obtained via a network of cooperative scouts in addition to locating radio collars of deceased animals. Data from annual aerial surveys and further work is still needed to assess habitat fragmentation and prey abundance, and this comprises an important part of our behavioral ecology investigation.

Spoor survey



In October 2008, we conducted the annual carnivore spoor survey for the SVC, to gather data regarding the re-colonization of the area by lions and the resultant possible competition between lions, hyenas and wild dogs. This survey involved vehicle-based spoor transects. In order to maintain consistency with previous spoor surveys done in the conservancy (Davidson & Romañach 2007), a penetration ratio of between 1:6 and 1:7 was chosen. The penetration ratio is the combined length of the transects as a proportion of the total sample area, i.e. $1\text{km}:\text{xkm}^2$.

In northern SVC, the total length of all transects combined was 233.7km. This gives a penetration ratio of 7.0 ($1639/233.7=7.0$), indicating that for every 7km^2 of northern SVC, 1km of transect was surveyed. In southern SVC, the combined transect length was 124.5km, in an area of 800km^2 , giving a penetration ratio of 6.4.

Experienced Shona trackers were employed to spot and identify carnivore spoor and at least 2 observers were present on each vehicle to corroborate spoor identification; methodology followed that tested by Stander (1998). Conducting this annual survey enables the identification of population trends of wild dogs concurrent with those of lions and hyenas.

The table below compares spoor frequencies and population estimates of lions, spotted hyenas, leopards and wild dogs in the SVC in the April 2007 and October 2008 surveys.

	April 07	Oct 08	April 07	Oct 08
	Spoor frequency		Population estimate	
NORTH SVC				
Lion	29.74	12.98	16	39
Spotted hyaena	26.91	6.32	18	79
Leopard	13.46	6.23	35	184
Wild Dog	8.69	3.65	55	137
SOUTH SVC				
Lion	8.60	6.73	28	36
Spotted hyaena	11.73	8.59	20	28
Leopard	16.83	8.89	14	63
Wild Dog	387.10	249.00	1	1
TOTAL SVC				
Lion	15.02	9.81	48	76
Spotted hyaena	17.81	6.96	40	107
Leopard	14.79	6.96	48	245
Wild Dog	14.57	5.55	49	134

Spoor frequency is defined as the average distance in km between spoor found of a given species on transects. Thus in the North SVC in April 2007 one lion spoor was sighted for every 29.74km of transect surveyed, whereas in October 2008, one lion spoor was sighted for every 12.98km of transect, indicating a significant increase in spoor density, and thus a concomitant increase in the estimated population of lions.

The preliminary results of the 2008 spoor survey indicate that populations of predators competing with wild dogs are noticeably on the increase in the SVC. However, the significance of these figures awaits a fuller analysis.

Community Benefits & Education

Informal education efforts are done at the same time as the interviews (n=159 so far), with the interviewer openly encouraging discussion and questions about our work and the value of carnivores. We have also established a collaboration with the Marwell Trust, Zimbabwe's Cheetah Conservation Program who have put together a booklet (translated into Shona and Ndebele) about predator-friendly livestock management. We hope to work together with them to employ an education officer to run workshops with farmers on this topic as well as lecture in schools about conservation related topics. There is also a proposal in place to set up an educational centre within the Savé Valley Conservancy, for the benefit of the whole of the south-east lowveld of Zimbabwe. We are actively involved in helping to set this up, and will help with teaching and field trips where required.

We are also working hard to attract tourists to the wildlife conservancies in the GLTFCA, specifically to see the wild dogs, thus giving them a financial value and enhancing their conservation prospects. The financial structure of these tourist packages ensure that a percentage of the revenue earned goes directly to the communities. Moreover, these visitors are encouraged to buy local crafts which are very high quality and deserve to be bringing considerable income to the surrounding communities who make them, but at the moment there is little market for them. We have marketed wild dog tourism through the French travel agency, Daktari (www.daktari-safaris.de) and are currently approaching other eco-tourism operators. We hope this will bring a direct, tangible benefit to the local communities, directly linked with wild dogs and the conservancy. We are also making a specific effort to increase tourism in the Nyangambe Community Area; an area of land adjacent to the SVC and set aside by the community for wildlife conservation. Increasing wildlife-derived income to this community would be of considerable benefit.

We continue to enhance the skills base of our three local project employees and train temporary assistants in various field skills as well.

SUMMARY

The African wild dog remains highly threatened in Zimbabwe's GLTFCA, and even in the SVC where its densities may still be some of the highest in the world, the species numbers a mere 130 individuals, perhaps half of which are this year's pups and therefore have a high chance of not surviving to adulthood. Our research regarding the status and conservation threats to wild dogs is therefore of major significance for the species.

Despite the difficult political, economic and logistical situation in Zimbabwe, we have nonetheless made significant progress with respect to the goals stated in our proposal, made possible through the funding provided by The Rufford Foundation. We would like to express our gratitude for your support and we look forward to continuing our relationship with you.



Thank you!