

Project Update: June 2013

The implementation of this project started in September, 2012 instead of the original planned June, 2012. The delay was caused by the absence of the project leader due to change of his PhD studies schedule in the United States of America. To date the project team has carried out the dry and wet seasons ecological surveys; the social ecological work is underway.

Executive Summary

Lwafi (approximately 2838 km²) is a long thin stretch of land that runs along the eastern edge of the Albertine Rift in Rukwa Region, western Tanzania. Substantial altitudinal changes include large swathes of *Brachystegia* woodland intersected by steep riverine gorges that flow west into Lake Tanganyika. Formerly a District Game Reserve until July 2011, it is now a National Game Reserve in recognition of both its wildlife potential and the need to improve conservation in the face of illegal resource extractions. Its legal boundaries are not determined with different maps showing different borders. The reserve is thought to hold many wildlife species including chimpanzees, elephants, buffalo, giraffe, waterbuck and wild dog populations. Despite its ecological importance, no scientific research has ever been conducted on the distribution and abundance of mammals, which makes difficult to plan for conservation. This project “The biodiversity and conservation of Lwafi Game Reserve in the South Western Tanzania was granted funding by the Rufford Small Grants for Nature Conservation (RSG) for implementation of the following project aims in Lwafi game reserve. *Aim 1a*: To investigate the distribution and abundance of large mammals in Lwafi, *Aim 1b*. To carry out comprehensive vegetation monitoring of the Game Reserve using satellite imagery, *Aim 2*: To determine the extent of current illegal extraction of both mammals and timber, *Aim 3*: To establish realistic and contemporary boundaries which will help revise Lwafi’s management status, *Aim 4*: To foster local community awareness and attitudes.

The implementations of Goals 1a & 1b (the ecological component) have been in progress since the last September. Goals 2, 3 and 4 (the sociological component) will be carried out in detail this summer 2013.

Project progress

Goal 1a: To investigate the distribution and abundance of large mammals in Lwafi. COMPLETED

Eighty transect lines ranging from 8 to 12 km in length were covered on foot in the study. The transects were located separately at 2 km apart to ensure independence of individuals. The transects were set up and conducted perpendicularly to the access road, and marked using a Global Positioning System (GPS). The access roads in Lwafi game reserve are the roads that traverse the reserve from east to west. These are Lyazumbi- Kabwe road about 50 km, Kakoma – Ninde road 30 km, Namanyere – Kilando road about 22 km, China – Wampembe road about 27 km and Kalambo -

King'ombe 20 km; are generally in straight lines. Three observers conducted the transects on foot. Observers were assigned such that one was on the transect line, the second on the left side of the transect line while the last was on the right side of the transect line. The transects started in the dry season of 2012 (September - December) and in the wet season (March – May) in 2013. Animals were mainly identified through tracks, carcasses, and droppings with the help of Mr. Christopher Mpemba and Conrad Mizengo, local guides who have extensive experience in trekking wildlife with spot hunters Lwafi Game Reserve. There were few direct sightings of the animals. Daily data collection started from 0700 to 1300 hrs – with work suspended up to 1400. The surveys resumed for another five hours from 1400 to 1900 hrs. About 80 transects have been conducted in Lwafi Game Reserve per season covering 480 km per season. About 42 species in dry season and 34 in wet season were found in the Lwafi game reserve (see table 1 below) however, these results are not analyzed yet.

Table 1. Species Observed Seasonally During Transect Surveys in the Lwafi Game Reserve

Species	Dry season (September – December, 2012)	Wet season (March – May, 2013)
Aardvark	X	X
African civet	X	
Baboon	X	X
Buffalo	X	X
Blued duiker	X	X
Bushbuck	X	X
Bush pig	X	X
Bush Rat	X	X
Cane Rat	X	X
Cheetah	X	
Dik dik	X	X
Duiker	X	
Eland	X	X
Elephant	X	X
Gazelle (grant)		X
Giraffe	X	X
Hartebeest	X	X
Honey badger	X	
Hyrax		X
Impala	X	X
Jackal		X
Klipspringer	X	X

Kudu	X	X
Leopard	X	X
Lion	X	
Mongoose	X	X
Monitor	X	
Monkey	X	X
Porcupine	X	X
Rabbit	X	X
Roan Antelope	X	X
Sable Antelope	X	X
Sitatunga	X	
Spotted hyena	X	X
Topi	X	
Warthog	X	X
Wild cat		X
Wild dog	X	X
Vervet	X	X
Zebra	X	
Total	42	34

Goal 1b: To carry out comprehensive vegetation monitoring using satellite imagery PARTIALLY COMPLETED

The Lwafi satellite images from 1984 to 2012 have been obtained from the WCS Tanzania GIS unit Mbeya office. The interpretation and classification is on progress to see the changes on vegetation cover of each major vegetation type over time. Ground truthing will be conducted using the 2012 dry season and 2013 wet season vegetation data.

Goal 2: To determine the extent of current illegal extraction of both mammals and timber. AUGUST 2013

This will involve interviews in selected villages; some were visited last year but no systematic data were taken. Interviews are planned to take place in 37 villages (10 people per village) in July 2013. Information on timber extraction and illegal hunting is sensitive but I am experienced in collecting such data and have published four scientific papers on this.

Goal 3: To establish realistic and contemporary boundaries. AUGUST 2013

In each village I will ask where local people perceive the Game Reserve boundaries and will GPS these points to get a realistic new 2013 boundary of the Game Reserve. This will be compared with legal boundaries in a view to redrawing and marking the Game Reserve borders.

Goal 4: To build awareness and cultivating conservation attitudes to local stakeholders. ONGOING

Ecological surveys have been conducted with the help of local people; it has improved awareness of these people to wildlife who have become informers of any illegal activities happening in the Lwafi Game Reserve. These people will provide a good link between the anti-poaching team of the Wildlife Division and local communities in the future.



A project leader Mr. Andimile Martin and assistant Mr. Conrad Mizengo in a thick bush of Lwafi Game Reserve during the ecological surveys. Photo credit, Andimile Martin



A project leader Mr. Andimile Martin (second left) and Mr. Conrad Mizengo (left) with the arrested illegal timber harvesters on the Lyazumbi- Kabwe access road. Photo credit, Andimile Martin



Kudu pallets in Lwafi Game Reserve. Photo credit, Andimile Martin



A project leader Mr. Andimile Martin and assistant Mr. Christopher Mpemba posing by the lumber's sleeping hut during the ecological surveys in Lwafi Game Reserve. Photo credit, Andimile Martin