

# Final report to the International Elephant Foundation



'Conservation of elephants in southern Murchison Falls Conservation Area (MFCA)'

# Introduction

## *Conservation through action*

If UWA and UCF can successfully protect southern Murchison Falls Conservation Area, Uganda's elephant population could triple in ten years, and many other species numbers could also recover handsomely. After forty years of complete neglect and few patrols, the last years has seen a significant increase in patrol coverage – with a near 100% prosecution rate.

Based on both the previous research book 'the elephants of Bunyoro (Law, Parker and Johnston, 1974) and field reconnaissance, three ranger posts were last year in southern MFCA to protect key habitats known to be used by the remaining 500 elephants. The Bulaya Ranger Post is on the most easterly side, on the Bulaya River (stream). Others are Mupina and Bugana

Four rangers are now present in each post – and poacher strongholds are being reclaimed. Where once the largest density of elephants in Africa lived, and where culling first took place, there will be a recovery once again.

Having a permanently based ranger capability in the area is a prerequisite to ensure that a foundation of protection, law enforcement and development can occur.

UWA now in a better position to defend and protect the wildlife.



# Bulaya Ranger Post Installation

**Objective 1;** Establish control of the Bulaya River Region in south eastern MFCA.

•**Output 1:** Permanent ranger facility in key elephant habitat.

Ranger facility at Bulaya was completed and occupied by January 2014 same period with Mupina ranger post. The facility is made from two converted 20ft shipping containers placed 5 meters from each other and roofed with iron sheets. The containers were acquired from Ortec Ltd, a construction company for Tallow Oil based in Hoima. The container base construction and container installation was done by Keltron Ltd, a reputable fabrication company in Uganda.

**Output 2:** Permanent ranger force in key elephant habitat.

Due to the urgency of ranger presence in the area, four rangers were deployed at the post immediately when the structures were roofed in early January 2014. The rangers are now permanently stationed at the post and they plan and carry out the daily patrols from the post.



Coordinated patrols-with other ranger posts like Mupina and Karuma are being exercised when need arises enabling greater patrol coverage in southern MFCA. This has improved the removal of snares, traps, poacher camps and other illegal activities by rangers in the area.





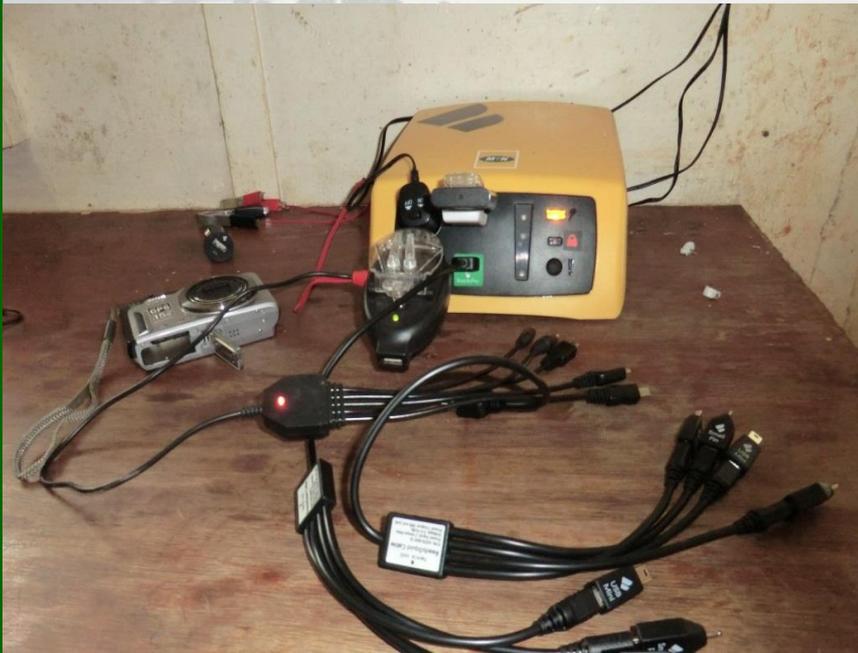
# All three Ranger Posts in South MFCA



A; Bulaya ranger post  
B; Mupina ranger post  
C; Bugana ranger post

# Solar power installation at Bulaya

In order for the ranger post to function well power is needed. UCF had to opt for solar power because of being cheap and easy to install. Solar panels were procured from Fenix International Uganda Limited. The solar kit consists of 4 X 30W solar panels, 3 ultra bright Led lights, phone charging cable with multiple tips, battery clip charger and mains grid charger. All the three ranger posts in the south MFCA have power.



Solar power not only provide light but has helped rangers to charge their mobile phones, radios, GPS, VHF radios and cameras. This has improved communication resulting from handset charging as well as safety and security of rangers at night.



# Intelligence led law enforcement

**Objective 2:** *Establish intelligence led law enforcement in Southern MFCA.*

**Output 1;** Four geo-location cameras provided for use. UCF procured and handed over 12 geolocation cameras in September 2014 making a total of 30 geo-cameras so far donated to MFCA. 4 of the 12 cameras were procured with funding from IEF under this project. So far eleven ranger posts in the southern MFCA have received WILDLEO cameras. These include; Mubako, Bugungu gate, Waisoke, Bulaya, Mupina, Rabongo, Bugana, Waisoke, Mupina, Rabongo, Bulaya, Karuma, Nyamasha, Kiruhura, Kiroko and Kimina. The cameras help in wildlife data recording, illegal activities and patrol coverage by rangers. A case in point is Mupina ranger post where 33 patrols were carried out between March and October 2014 .



During that period, the following were recovered by rangers; 13 poachers arrested, 40 poacher camps destroyed, 156 wire snares and 15 metal traps recovered, 24 spears, 18 panga, 9 hoes, 2 axes, 22 saucepans and 21 jerycans.

Ranger intensified their patrols during the Christmas holidays as this is the pick season for bush meat poaching in most conservation areas.



# Map showing existing ranger posts in S. MFCA with geo-cameras .



## Conservation through action

As show on the map, ranger posts with geo-cameras in the south MFCA include:

1. Mubako HQ
2. Bugungu gate,
3. Bugana
4. Waisoke
5. Mupina
6. Rabongo
7. Bulaya
8. Karuma
9. Nyamasha
10. Kiruhura
11. Kiroko
12. Kimina

# Rangers trained in use of geo- cameras

**Output 2:** Rangers trained in information gathering.

Dr. Andrew Lemieux, a US trained criminologist has trained over 50 rangers in MFCA to collect evidence of illegal activities using a geo-location camera with an integrated GPS unit. UCF's Patrick Agaba together with two UWA analysts carried out refresher training in August 2014 where 38 rangers were reminded how to use the GPS geotagging and tracking functions of the camera.



# Rangers trained in use of geo- cameras

**Output3:** *Knowledge management, mapping and interpretations.*

Four rangers were trained and qualified as analysts. The analysts are responsible for data management and crime mapping and interpretation. Andrew Lemieux also trained senior managers at UWA HQs and in QECA and MFCA. Analysts can now train other rangers in the use of geo-cameras.



In his July-September 2014 quarterly report, Dr. Andrew Lemieux remarked *'it was amazing to see your rangers begin training one another while I watched from the other side of the room. The capacity building I've envisioned for this project is surely finding roots in MFCA'*. This is a sustainable project and we are very grateful to have it and to be the first user.



# Great impact by WILDLEO

Supported with the presence of GPS-located and dated photography as evidence to support conviction of the poachers, the prosecution success percentage has surpassed UWA expectations. To date this has led to nearly 100% success procession in both MFCA and QECA. Report from MFCA show that from January to end of October 2014, 220 suspects were arrested in MFCA for committing wildlife related crimes. 197 were successfully prosecuted and convicted in courts,

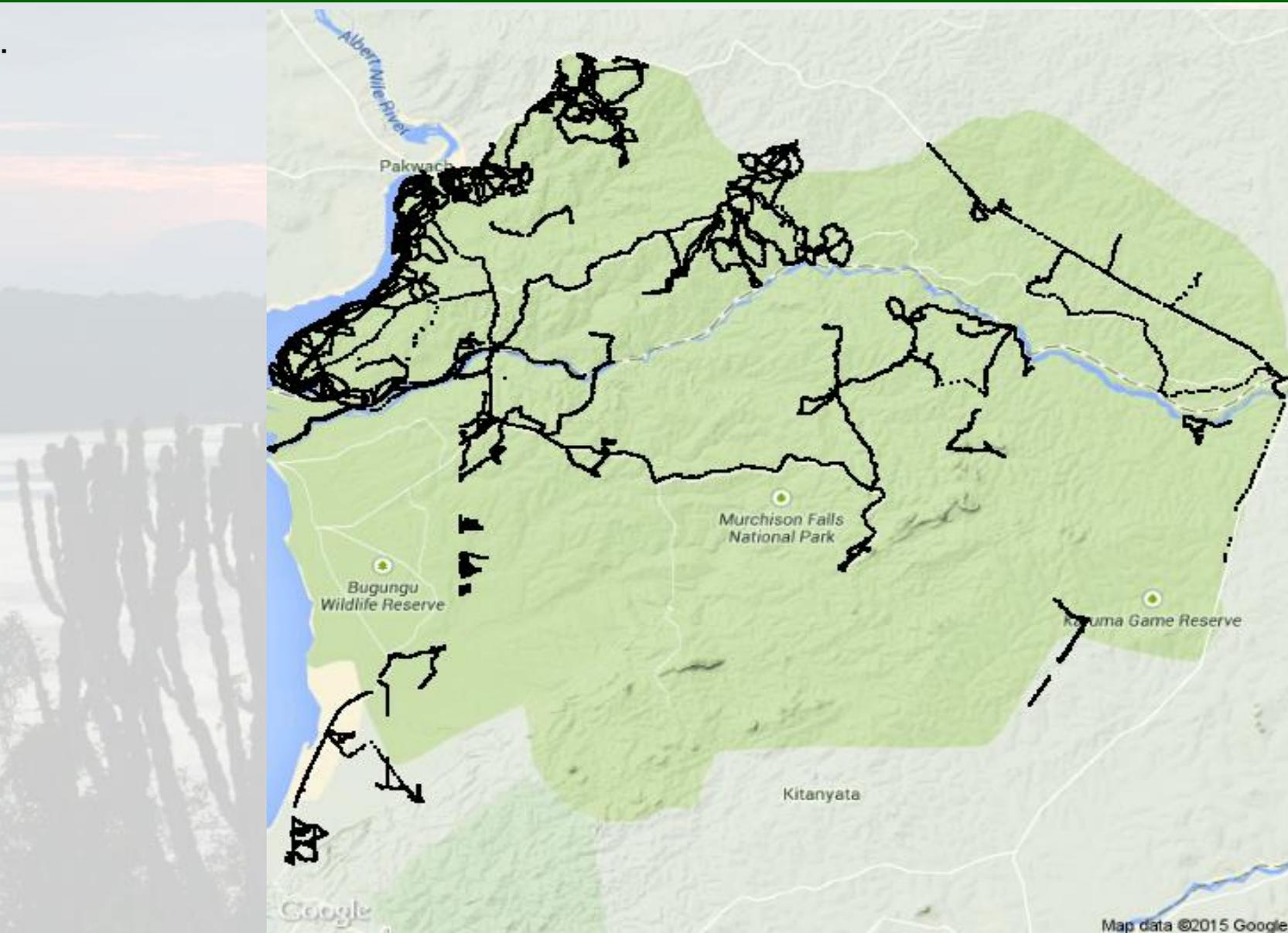


13 are still undergoing prosecution and 10 were cautioned and released by UWA management. This is a great impact in fighting poaching. Court has also made it difficult for poachers. A poacher can be charged with more than 4 accounts before court. These include;

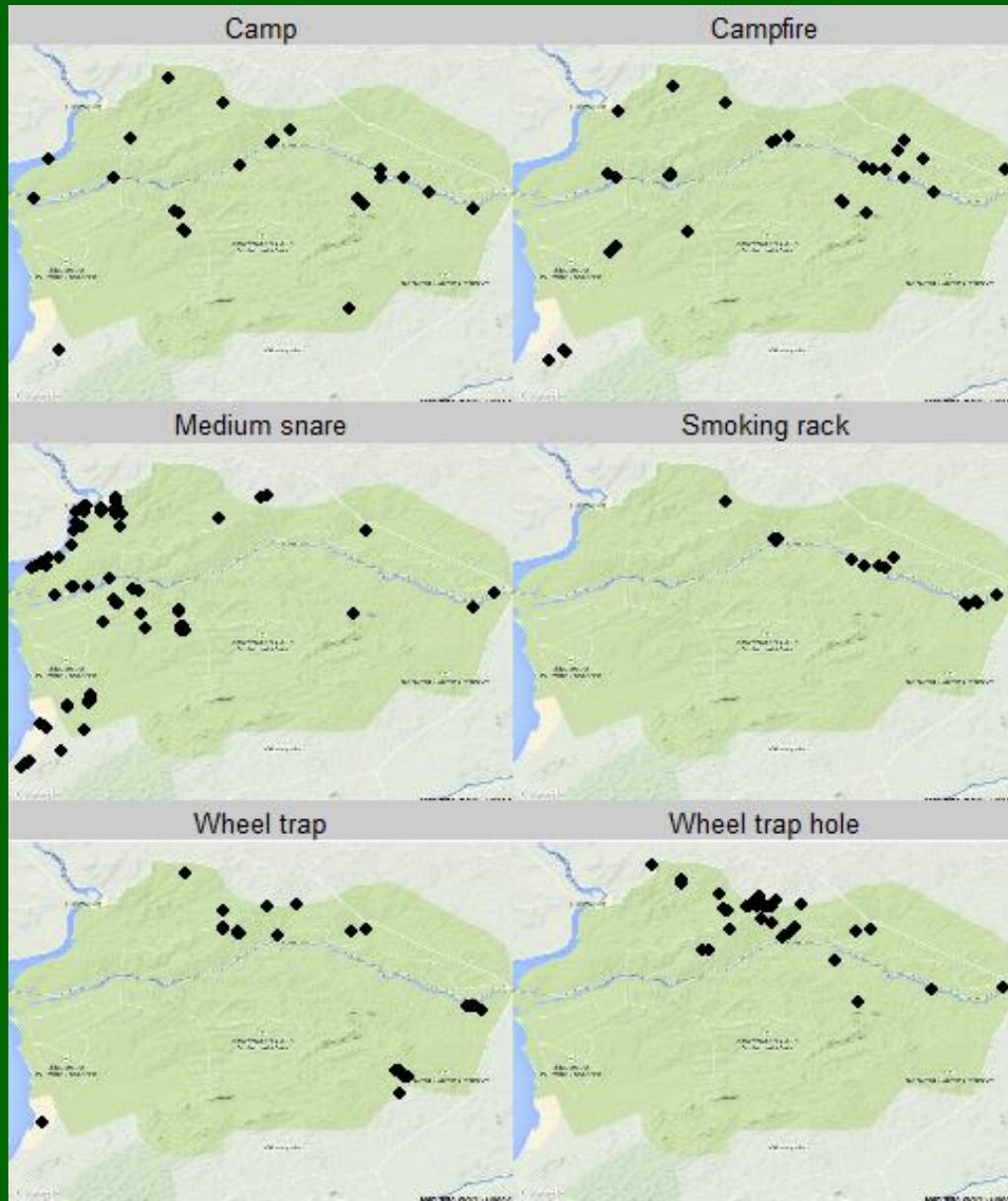
1. illegal entry into the park
2. possession of devices that can injure, wound or kill wild species
3. illegal killing of a wild specie
4. illegal possession of fire arms (when found with one).



# WILD LEO Patrol coverage in MFCA, October- December 2014



# Poacher activity in MFCA October – December 2014



## *Conservation through action*

The evidence of poacher activity found by rangers using geo-location cameras during this period include poacher camps, campfire, snares and wheel traps. The snares and wheel traps are indiscriminate and will kill or injure any animal that come into contact.

# Achievements

## *Conservation through action*

- According to MFCA report, 512 patrols were conducted in July- September period. The patrols included 117 extended, 131 overnight ambushes, 238 day patrols and 26 marine operations conducted to combat illegal activities within MFNP.
- 1 SAR rifle, 44 rounds of ammunitions, 40 spears, 226 wire snares, 44 metal traps, 32 panga/knives, 1 hoe, 30 fishnets, 1 axe, 31 canoes, 40 Oars, 2 lines of hooks, 6 bicycles, 1 handsaw, and 1 motorcycle were removed.
- 4 Elephant poachers arrested and SAR rifle with 44 rounds of ammunition recovered following intelligence information.
- Another notorious elephant poacher in the Bulaya region went missing in the park.
- A number of poaching activities were foiled as a result of good intelligence.
- From January to October 2014, 220 suspects were arrested in MFNP for committing wildlife related crimes. 197 convicted, 10 cautioned and released, 13 cases still undergoing proceedings in Gulu and Masindi Court.
- The sentencing for the convicts for bush meat poaching have ranged from a fine of 150,000 - 2,000,000 Ugandan Shillings (unachievable for local poaching) or a jail term ranging from 3 months - 24 months.



# Southern MFCA Elephant Data

*Conservation through action*

**Objective 3:** *Better understand and manage southern MFCA elephant population;*

**Output 1;** *Rangers trained in basic elephant data collection;*

UCF and UWA have carried out training in elephant data collection at Mubako, MFCA headquarters. 12 rangers were trained and 8 were from ranger stations in southern MFCA. Elephant data collecting sheets for southern MFCA were distributed to ranger posts of Mubako, Mupina, Bulaya, Rabongo, Karuma and Wairingo. The data sheet consists of: date, area, coordinates, evidence of elephants, number, males, females (young, old) and other remarks. In addition Andrew Lemieux trained rangers using the WILDLEO geo-camera system to record photographs of elephant observations (direct or indirect) whilst on patrol. This is helping rangers continually build up a 'temporal and spatial' distribution of elephants in southern MFCA.

**Output 2;** *Elephant data collection from south MFCA.*

Information from ranger posts in south MFCA says that elephants are distributed throughout southern MFCA. Similar information is confirmed by community conservation department of MFCA

The next slide shows a summary of elephant sights in different areas of the southern MFCA by foot rangers during their normal patrol.



# Southern MFCA Elephant Data

*Conservation through action*

Elephant sighted by foot rangers in south MFCA since February 2014

Date	Area	Bull ele	Cow ele	Calve ele	No of ele
Feb. 2014	Mubako	6			6
Feb. 2014	Mupina/Rabongo		20	12	32
Feb. 2014	Karuma	5			5
17 June 2014	Waiga, Bugungu		8	4	12
July 2014	Olwero, Mupina		7		7
July 2014	Sitye, Mupina		3		3
11 Sep 2014	Bunya, Kiryadongo	2	7		9
18 Dec 2014	Waiga, Sambiya		15		15
Sept 2014	Kiswata, Wairingo		6	2	8
13 Jan 2015	Wairingo		20	7	27

Considering the data gathered by the few foot rangers in southern bank of MFCA since February 2014 in the table above, it is very possible that south MF has more than double number of elephants than what is counted in the aerial surveys. The 2012 aerial survey by UWA covered 37 transects in the south bank of MFCA and came up with only 6 elephants seen but the population were estimated to be 47 elephants (same information on IUCN- elephant database, MFPA 2012).

With the introduction of geo-location cameras use that now covers 12 ranger posts in south MFCA, we are optimistic to get more data about elephant distribution and movement from foot rangers than before. The elephant data collection by foot rangers shall be compared with future aerial surveys to come up with a fair elephant population in south bank of MFCA.



# Southern MFCA Elephant Data

*Conservation through action*

Wildlife population estimates of species observed, 2012 aerial survey (source UWA, IUCN).

Species	North Bank		South Bank		2012
	Population est.	SE	Population Est	SE	
Baboon	117	79	377	236	494
Buffalo	5,926	1,841	1,580	577	7,506
Elephant	1,569	598	47	38	1,617
Giraffe	757	350			757
Hartebeest	4,927	1,179	1,336	516	6,263
Hippo	570	224	220	153	790
Kob	26,313	5,012	9,921	3621	36,234
Oribi	23	16			23
Warthog	1,070	281	1,439	466	2,508
Waterbuck	4,919	721	1,729	542	6,648

South MFCA data for wildlife population were scanty and few researchers have ventured in south of the Nile river of MFCA to get wildlife data since 1980's. Previous aerial surveys from 1990's to 2010 gives a general total estimates of Wildlife population in MFCA . It was in 2012 surveys when UWA, MFCA reports started giving estimates of wildlife population in both north and south of the Nile river separately (information shared by IUCN, elephant database 2012) . This is very important and the data shall act as the baseline data for future wildlife estimates I in the south.



# Southern MFCA Elephant Data

*Conservation through action*

Estimated species abundance in MFCA north and south of the Nile river and for the whole area, 2014 (source, UWA)

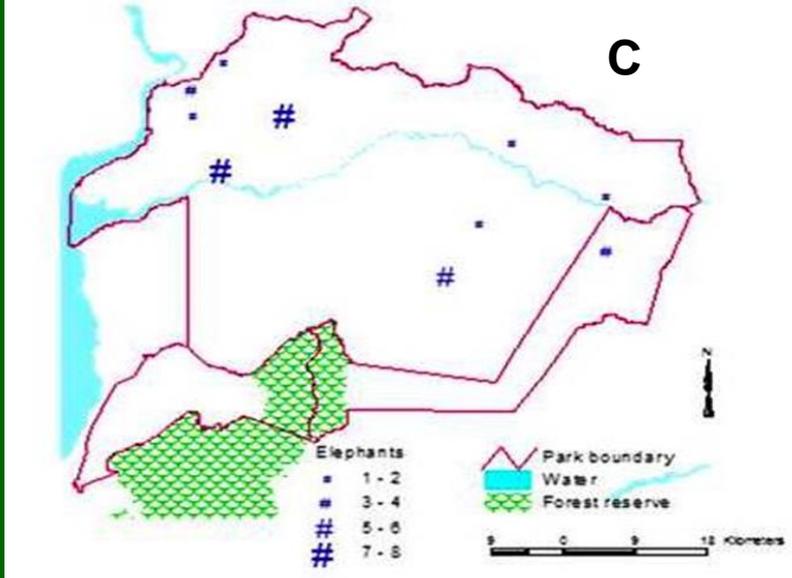
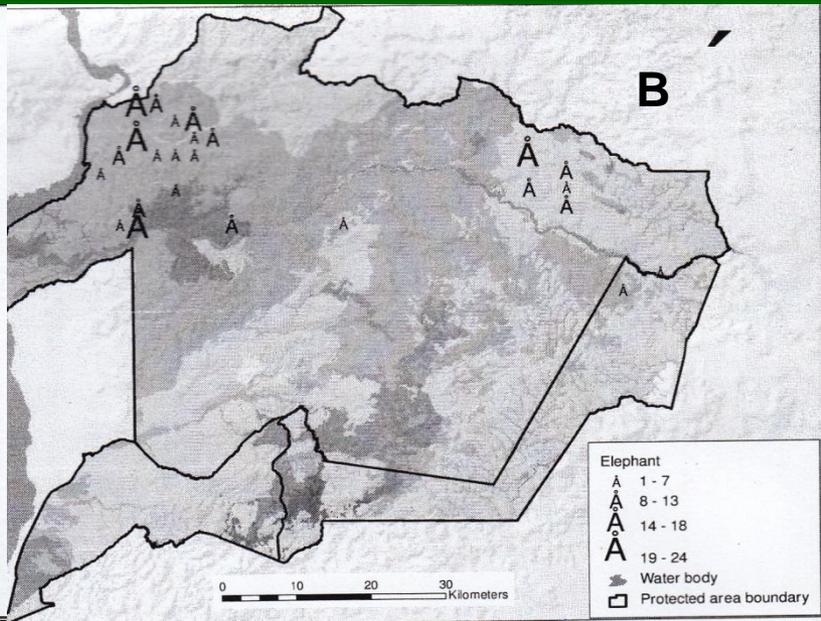
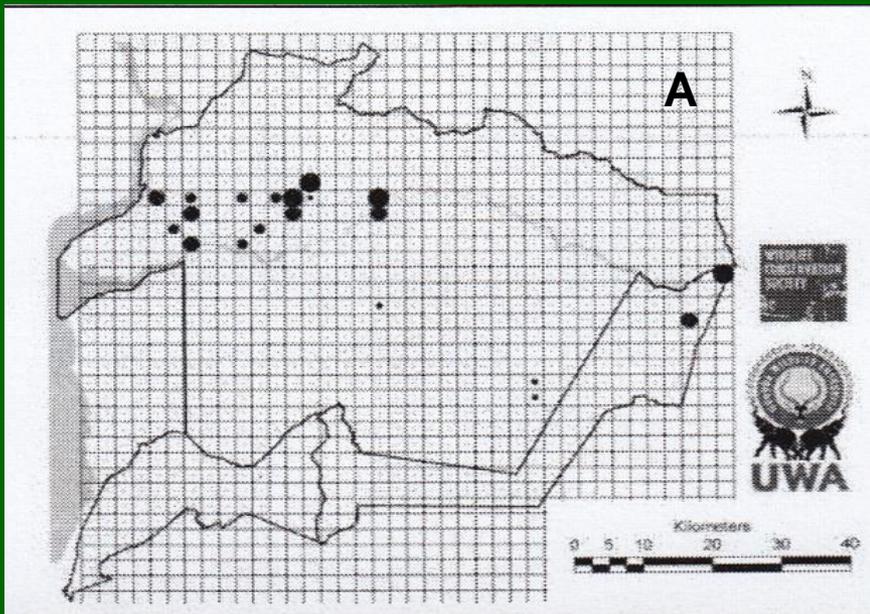
Species	North bank			South bank			MFCA Total		
	Est	SE	95% +/-	Est	SE	95% +/-	Est	SE	95% +/-
Elephant	977	349	767	375	214	417	1,330	441	970
Buffalo	7376	2,174	4,783	5,589	2,336	5,139	12,841	3,411	7,505
Giraffe	884	241	531				860	235	517
Hartebeest	5,385	966	2,125				8,108	1,149	2527
Hippo	809	289	636	884	237	522	1,683	325	714
Oribi	558	241	530				543	234	5,515
Uganda Kob	50,653	9,966	21,925	8,910	2,550	5,611	58,313	10,432	22,951
Warthog	3,330	616	1,355	1,723	295	650	4,986	844	1,857
Bushbuck	3,627	637	1,401	1,687	434	954	5,240	790	1,737

South bank of MFCA is more forested than the north. This has made it a bit difficult to sight wild animals from aerial view compared to the north bank of the Nile river which is more of savanna grassland. It is possible that some herds of elephant could have been missed out in the forest during the survey.

Next slide has 3 maps of aerial surveys of 2010, 2012 and 2014 showing the distribution of elephants in MFCA. All three maps shows more density of elephant in north bank of the Nile River than the south bank.



# MFCA maps of elephant distribution



**A;** 2014 aerial survey  
**B;** 2012 aerial survey  
**C;** 2010 aerial survey

From the recent surveys of 2010, 2012 and 2014 as indicated by the maps, it is clear that elephants are found in both north and south bank of the Nile River of MFCA though the concentration is more in the north than the south of MFCA.

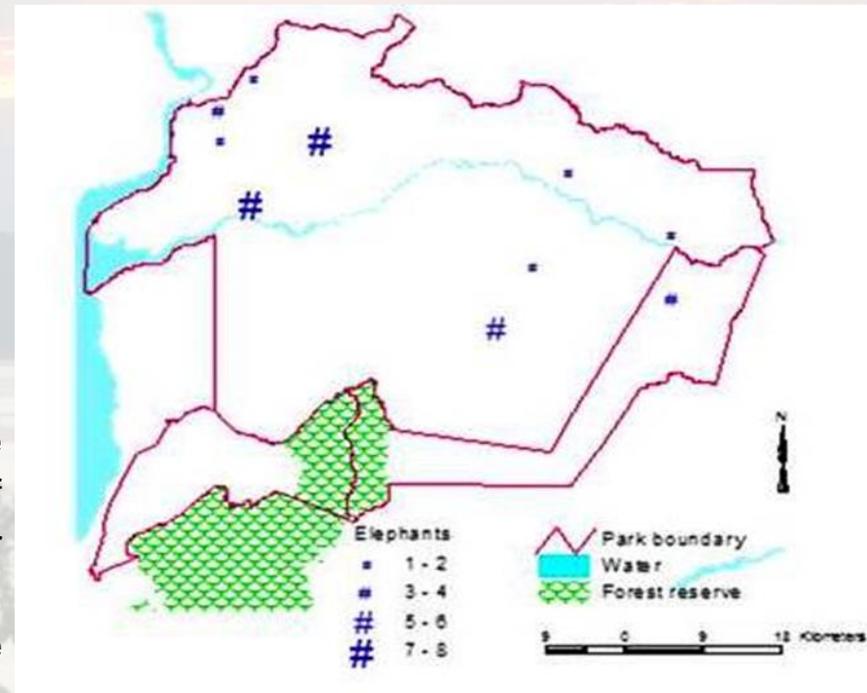
# Southern MFCA Elephant Data



Finally three elephant crossing points have been identified across the Nile downstream of the Falls. It is still not known whether elephants cross further upstream, or ever did. Knowing that elephants can and do cross the Nile especially important to the viability of the remaining elephant population in southern MFCA, but also their contribution to the push back of the highly regenerated habitat – however small their impact might be. Generally it is clear that the once isolated elephant population in the southern MFCA is

## *Conservation through action*

*MFCA map showing encounters of the recorded elephants spatially mapped using ArcView 3.3 in 2010.*



far more widely distributed than thought. With the current improved management and reactivation of anti-poaching patrols under strong and dedicated management of UWA, we predict a continuous increase in wild animals in MFCA in the coming years.

# Animal Population trend in MFCA since 1973

*Conservation through action*

Species	pre-1973	1980	1991	April 1995	Dec 1995	June 1999	May 2002	Jul 2005	March 2010	July 2012	Oct 2014
Buffalo	30,000	15,250	1,610	1,087	2,477	3,889	8,200	11,004	9,192	7,506	12,841
Giraffe	150-200	-	78	100	153	347	229	245	904	757	860
Hippo	12,000	7,565	-	1,498	1,238	1,792	-	2,104	955	790	-
Uganda Kob	10,000	30,700	-	6,355	4,373	7,458	-	9,315	36,640	36,234	58,313
<b>Elephant</b>	<b>12,000</b>	<b>1,420</b>	<b>308</b>	<b>201</b>	<b>336</b>	<b>778</b>	<b>692</b>	<b>516</b>	<b>904</b>	<b>1,617</b>	<b>1,330</b>
Waterbuck	-	5,500	-	539	566	792	-	1,441	6,430	6,648	4,986
Warthog	-	-	-	411	856	1,639	-	2,298	1,962	2,508	5,240
Hartebeest	-	14,000	-	3,068	2,431	2,903	-	4,101	3,589	6,263	8,108

Above is population estimates of large mammal species in MFCA prior to 1973 and from aerial surveys conducted in 1980, 1995, 1999, 2005, 2010, 2012 and 2014 to determine animal population distribution and trends.

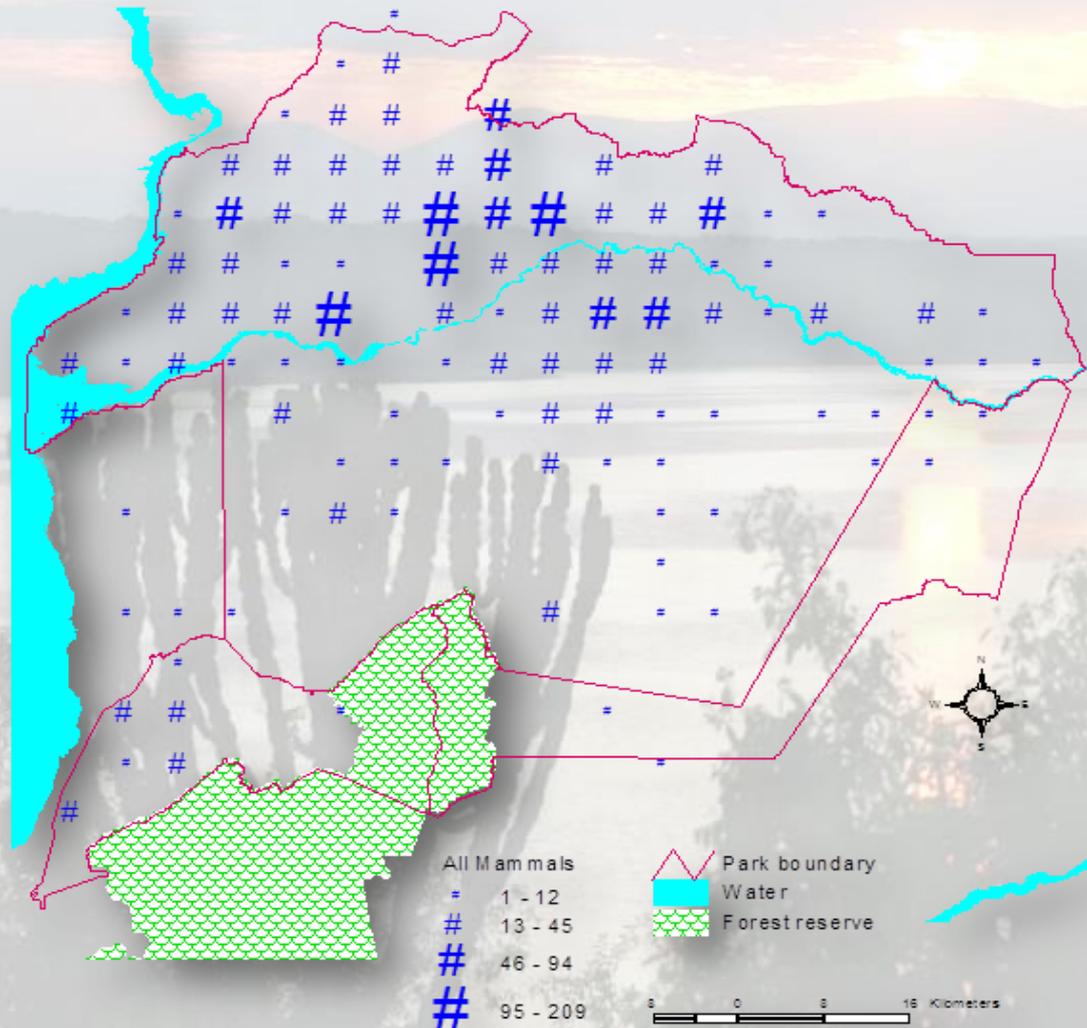
The elephant population was estimated at 1,617 individuals for 2012 compared to 904 in 2010. This gives indication that the population of elephants has significantly increased even when compared to the figure of 516 obtained during the 2005 SRF(Systematic Reconnaissance Flight) . However 2014 surveys shows a decline from 1,617 in 2012 to 1,330.

The October 2014 aerial survey shows a decline in elephant population from 1,617 in 2012 to 1,330 in 2014. However, results generally suggest a recovery of wildlife populations in MFCA. This could be attributed to improved management and reactivation of anti-poaching patrols under strong and dedicated management of UWA.

# Distribution of animals in MFCA

## Conservation through action

**MFCA map showing abundance of animals encountered and spatially mapped using ArcView 3.3 in 2010.**



Relative abundance of animals, in the different areas of the protected area was represented using the symbol of different sizes. It is clear in the map that there are more concentration of animals in the north MFCA than the south but the south also has fairly distribution of animals. Having a big forested area in south MFCA, It is possible that some herds could have been missed out during the survey and thus not counted since sightings were mainly in grasslands and very few in the woodland. Generally the animal population in MFCA is steadily increasing for the majority of species. Most of the species are steadily recovering where as others seem to be stable.

# Expected impact

## *Conservation through action*

- Intensive ranger patrolling in southern MFCA
- Large scale reduction in poaching pressure
- Removal and destruction of existing snares, traps and poacher camps.
- Reduction in elephant mortality and injuries
- Improved elephant management in the region
- Intelligence-led patrolling
- Wildlife data recording supported
- Improved prosecution and sentencing rate.
- Better understanding and management of poaching, habitat, elephant and lion populations
- Temporal and spatial information about the elephants in Southern MFCA



# Expenditure

*Conservation through action*

The \$15,000 IEF provided was a huge help in filling the funding gap for Bulaya ranger post in southern Murchison Falls Conservation Area:

Other funds were sourced from David Shepherd Wildlife Foundation , Sea World Busch Gardens Conservation Fund and US Fish and Wildlife Service

<b>Detail and costing as per project proposal</b>	<b>Amount received from IEF \$ 15,000</b>	<b>Expenditure \$</b>
Project Personnel		2,550
Travel Expenses		2,750
Laptop for office		800
Bulaya Ranger Post Construction		5,800
Law enforcement support		1,500
Elephant research		1,600
<b>TOTAL in US \$</b>		<b>15,000</b>



# Thank You!

*Conservation through action*

On behalf of the Uganda Conservation Foundation, we take this opportunity to express our sincerest appreciation for your contribution/support to save the remaining African Elephants. By conserving and protecting the mentioned species, automatically we are conserving all the remaining species within the MFCA.



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