

KIBALE CONSERVATION AREA MONITORING AND RESEARCH PLAN IMPLEMENTATION

STATUS REPORT

By

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July 2008

ABBREVIATIONS AND LIST OF ACRONYMS

ABBREVIATION

ADF
DRC
GPS
IBA
KCA
KNP
KWR
MIST
MOU
NHF
PAs
SNP
TRA
TSWR
UWA

MEANING

Allied Democratic Forces
Democratic Republic of Congo
Global Positioning System
Important Bird Areas
Kibale Conservation Area
Kibale National Park
Katonga Wildlife Reserve
Management Information System
Memorandum of Understanding
Natural High Forest
Protected Areas
Semuliki National Park
Threat Reduction Assessment
Toro-Semliki Wildlife Reserve
Uganda Wildlife Authority

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Background

- Uganda Wildlife Authority (UWA) developed a 5 year Monitoring and Research Plan for enhancing implementation and application of Monitoring and Research in Management actions and in line with the UWA Monitoring and Research Policy 1999. The plan identified the threats to Protected Areas (PAs), focusing on the specific parameters and indicators to measure, and the data collection and analysis methods to be used.
- The Monitoring Plan also profiled the means of addressing the threats using the Threat Reduction Assessment (TRA) approach with Area, Intensity and Urgency as criteria rankings. The Prioritized list of threats for Kibale Conservation Area PAs include but is not limited to: Poaching, Human-wildlife conflict, Fires and Illegal resource harvesting.
- This report focuses on implementation of the Monitoring Plan using Ranger Based Data, which is fed into Management Information System (MIST) and EXCEL as tools identified in the plan for analyzing the data to address management effectiveness.
- From the different monitoring plans for the different PAs, it was evident that there were some common threats, which are crosscutting namely poaching, encroachment, wild fires, plant resource harvesting, and human-wildlife conflict.

KIBALE NATIONAL PARK

Habitat Description/Conservation Targets

Moist evergreen medium altitude high forest, transitional, centres of endemism, chimpanzees, grasslands, crater lakes, River Dura and River Mpanga, wetlands-Ramsar sites, Important Bird Area (IBA).

13 species of non human primates, rich in bird species, 25% of Ugandan chimpanzee population, home to Kibale ground thrush, many unique fish species, red colobus, migratory stop for birds, screw palm, *encephalartos whitelockii*.

Map of Kibale National Park

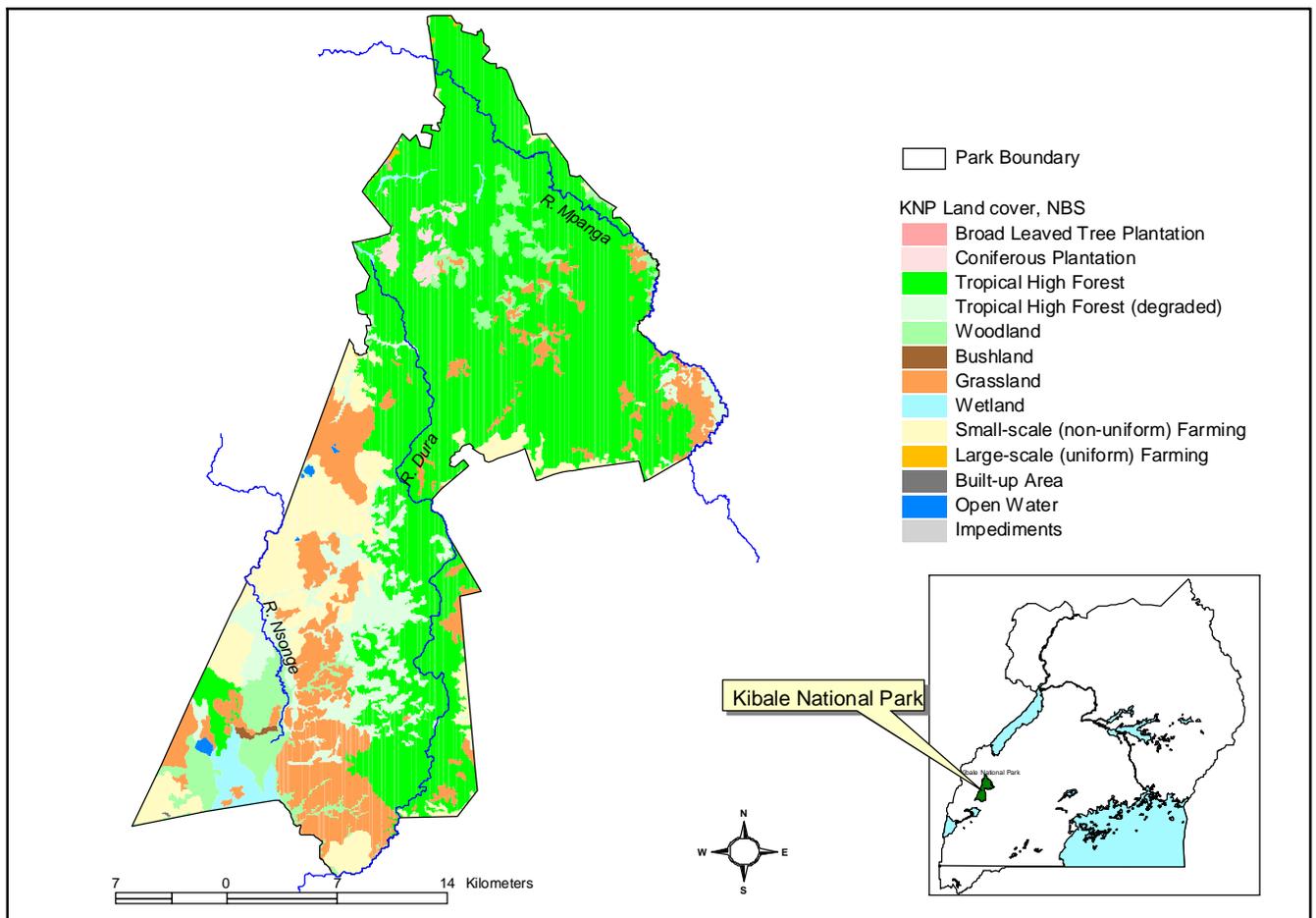
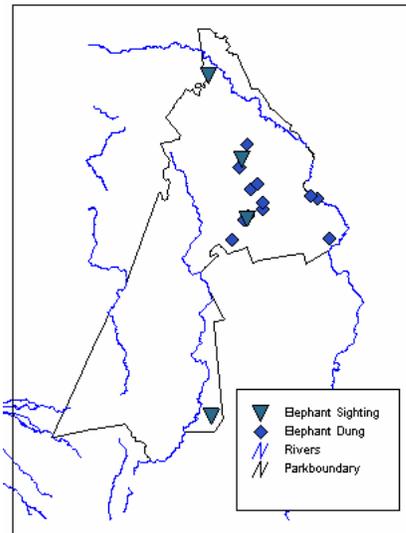


Table 3: KNP Population trends

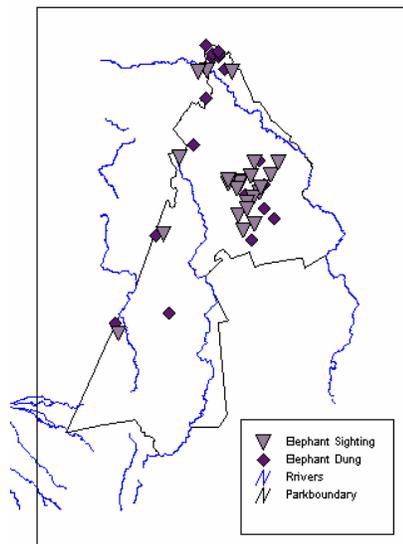
Species	Population Trends		
	1963-1970 ¹	2001 ²	2005
Black and White Colobus (<i>Colobus guereza</i>)		7,970	7,346
Grey Cheeked mangabeys (<i>Lophocebus albigena</i>)		16,210	11,603
Red Colobus (<i>Procolobus rufomitratu s tephrosceles</i>)		32,980	30,218
Red tailed monkeys (<i>Cercopithecus ascanius</i>)		33,460	37,312
Chimpanzees (<i>Pan troglodytes</i>)		1,298	921
Baboons (<i>Papio anubis</i>)			6,468
Buffalo (<i>Syncerus caffer</i>)		124	554
Elephants (<i>Loxodonta africana</i>)	413	262	393
Bush pig		410	556

MAMMAL DISTRIBUTION MAPS

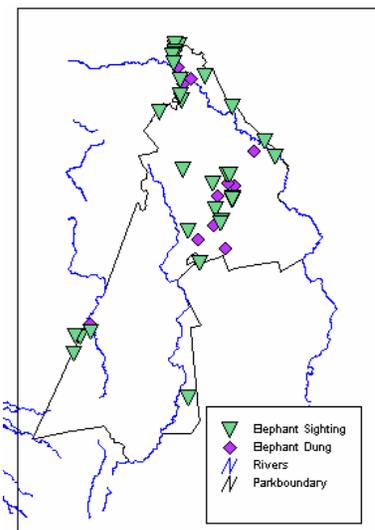
Elephant sightings 2004



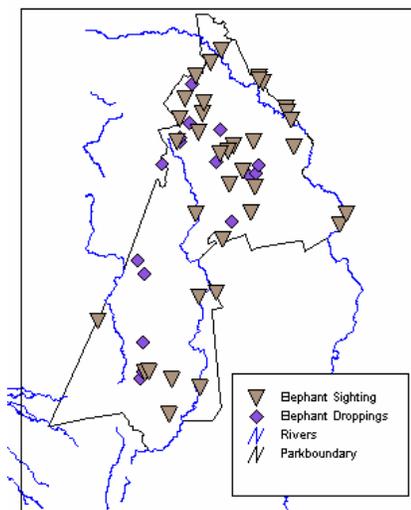
2005



2006



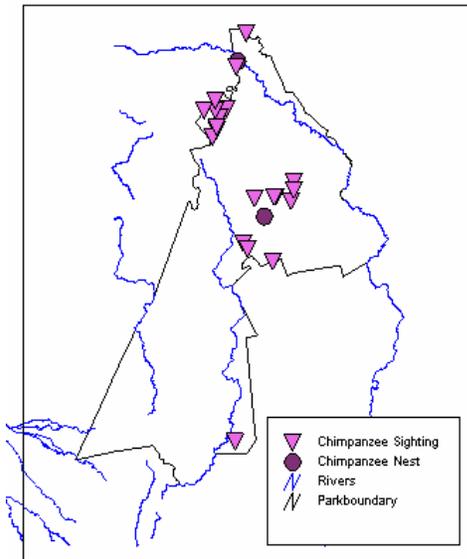
2007



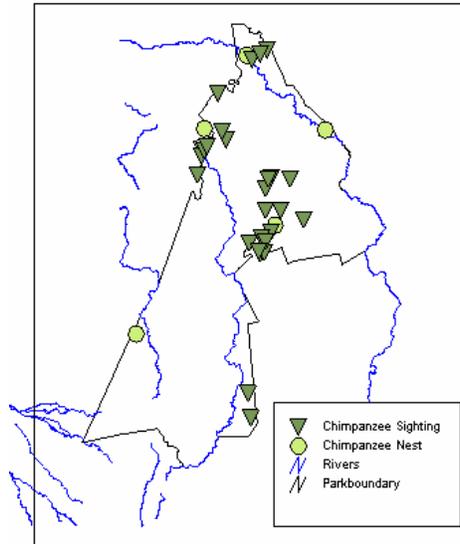
- ✓ The distribution maps show increase in elephant sightings from 2004 to 2007.
- ✓ More concentration of elephants in Central areas of Ngogo and North KNP.
- ✓ Guides management to monitor crop-raiding patterns and implement the deterrent measures e.g deterrent trenches and deployment of staff

CHIMPANZEE SIGHTINGS

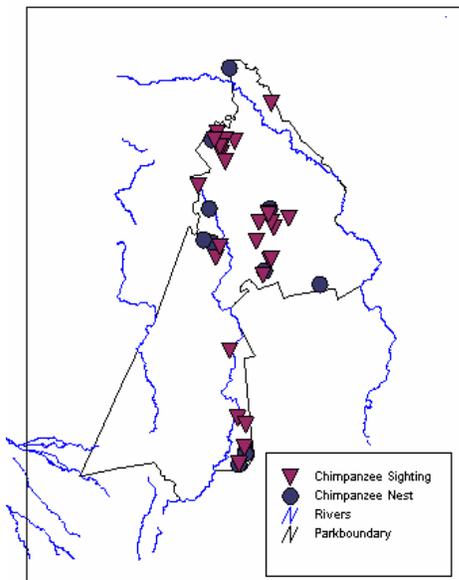
2005



2006



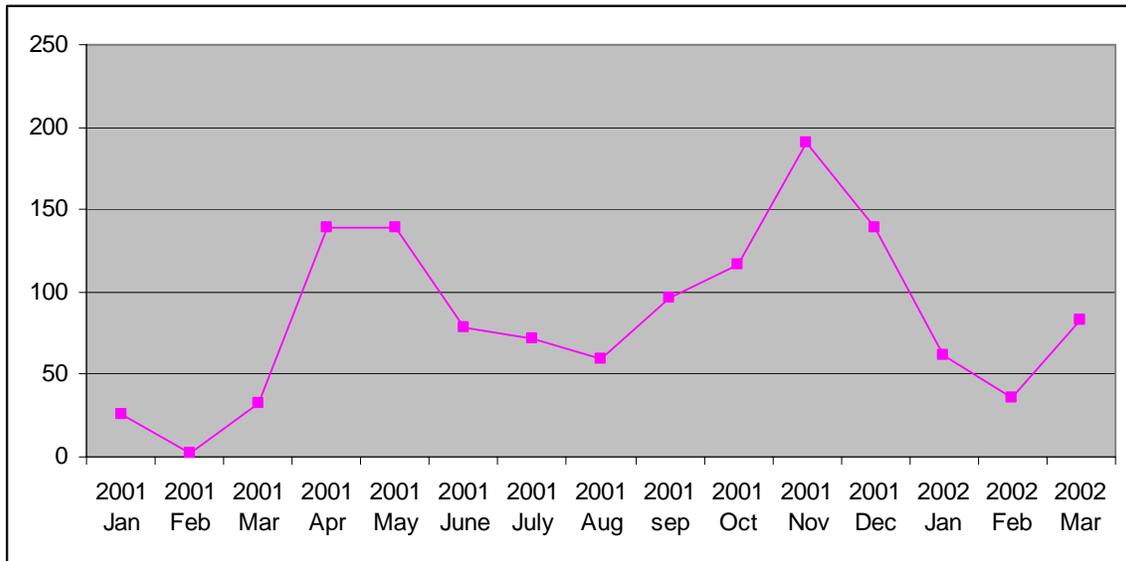
2007



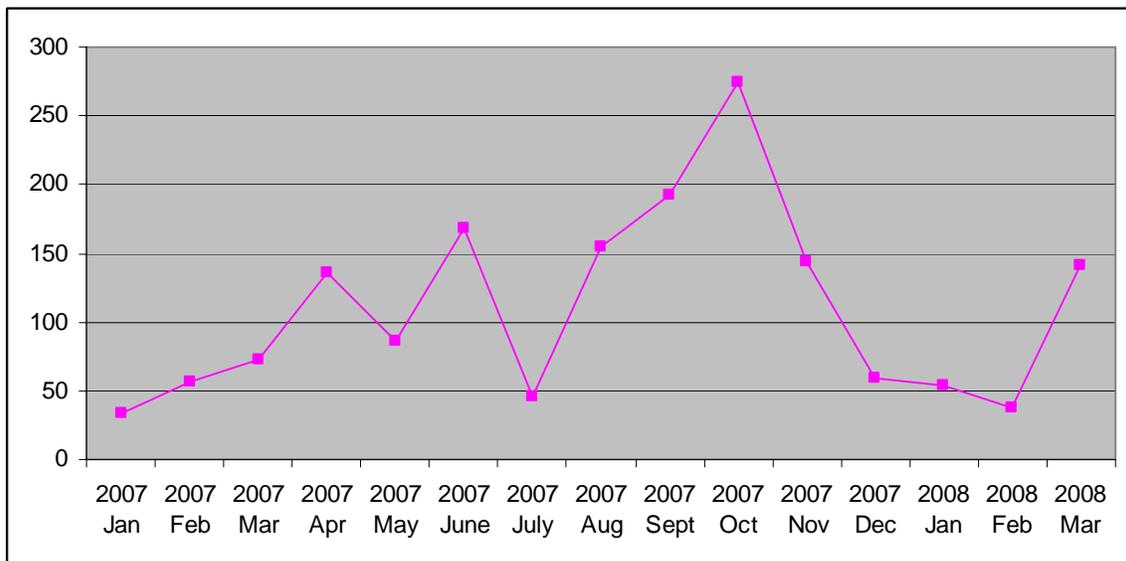
- ✓ More chimpanzee sightings around Kanyanchu Tourism area, Kanyawara and Ngogo research areas.
- ✓ More encounters in the south in 2007 than in 2006
- ✓ The chimpanzee sightings were important for Tourism rangers during chimpanzee tracking.

KNP Rainfall Pattern 2001, 2007

2001



2007



KNP THREATS

The Log frame below shows the KNP ranking of the threats in order of their importance, management strategies and indicators as per the monitoring plan:

Priority	Threat	Management strategies	Indicator
1	Poaching	<ul style="list-style-type: none"> • Patrols/Intelligence gathering • Arrests and prosecution • Sensitisation • Benefit sharing 	<ul style="list-style-type: none"> • No of arrests/month • No of prosecutions/month • No of snares and carcasses/km/month • Mammal density
2	Human wildlife conflict	<ul style="list-style-type: none"> • Conflict resolution • Sensitisation • PAC measures 	<ul style="list-style-type: none"> • No of crop raiding events/month
3	Impact of rising population of elephants	<ul style="list-style-type: none"> • Systematic patrols, Case patrols, population census 	<ul style="list-style-type: none"> • No of saplings destroyed in restoration zone, • No of new areas raided per month, • Footprint sizes and dung counts/patrol
3	Fires	<ul style="list-style-type: none"> • Fire fighting • Fire breaks • Early burning • Fire Management Plans • Sensitisation 	<ul style="list-style-type: none"> • No of fires/month • Area burnt/month and its location • No of volunteers/fire outbreak.
5	Illegal fishing/Rattan harvesting	<ul style="list-style-type: none"> • Patrols • Arrests and prosecution • Fines • Sensitisation/resource sharing 	<ul style="list-style-type: none"> • Type of resources harvested/month • No of people encountered/km/month • No of harvesting signs/km/month • GPS locations of sites
7	Invasion by exotic species	<ul style="list-style-type: none"> • Eradication 	<ul style="list-style-type: none"> • Total area covered by exotic species per year
8	Colonisation of grassland by forest	<ul style="list-style-type: none"> • Size of grassland remaining. • Rate of colonisation 	<ul style="list-style-type: none"> • Area of grassland per year.

9	Illegal timber harvesting	<ul style="list-style-type: none"> • Incidences of pitsawing. • Extent of pitsawing. • Species harvested 	<ul style="list-style-type: none"> • No of fresh stumps/km • GPS points • Arrests made/month
10	Loss of home range through clearing of forest fringes outside the park	<ul style="list-style-type: none"> • Rate of forest loss 	<ul style="list-style-type: none"> • No of patches cleared/year. • Area cleared/year
11	Charcoal burning	<ul style="list-style-type: none"> • Patrols. • Arrests and prosecution. • Fines. • Sensitisation 	<ul style="list-style-type: none"> • No of charcoal kilns/km. • No of arrests/month
12	Grazing	<ul style="list-style-type: none"> • Patrols • Arrests and prosecution • Fines 	<ul style="list-style-type: none"> • Size and no of herds/month • No of arrests and fines/month • Location of grazing incidencies/month
13	Road kills	<ul style="list-style-type: none"> • Reducing road speed • Signage • Humps 	<ul style="list-style-type: none"> • No of animal species killed/month

1 Poaching

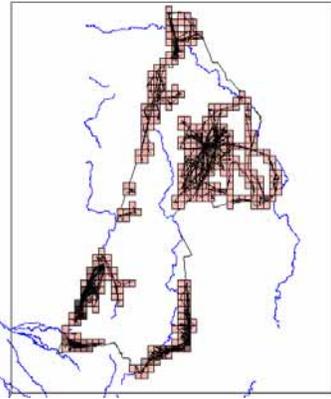
According to the KNP Monitoring and Research Plan, Game poaching and the snaring of non- target animals was ranked the highest threat.

This has been checked following the monitoring plan strategies, by using a combination of intensified patrols and intelligence gathering that often resulted into arrests and prosecution of offenders.

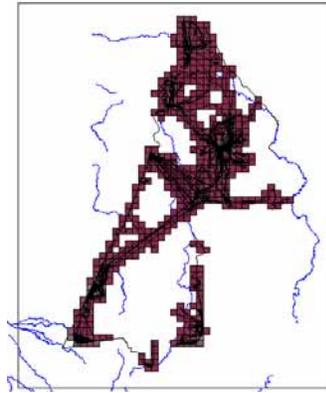
Ranger Patrol Effort 2004 – 2007

Over the years, there has been an increase in the patrol coverage in an attempt to stem the poaching threat. This is also reflected in the MIST Patrol coverage maps, which shows increase in the patrol coverage effort (from 2004 – 2007).

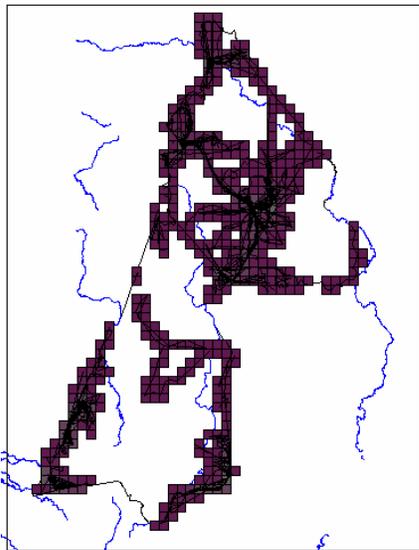
**Mapping Patrol Coverage.
2004**



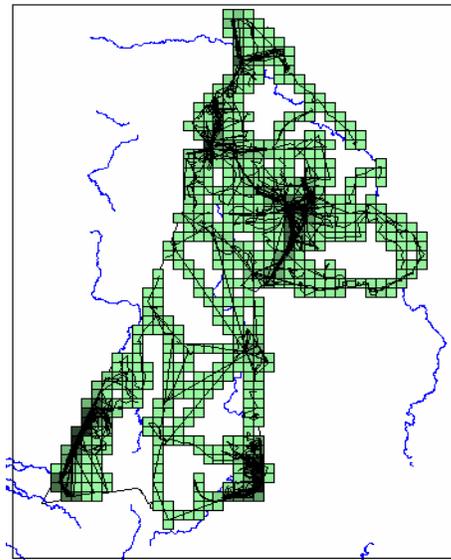
2005



2006

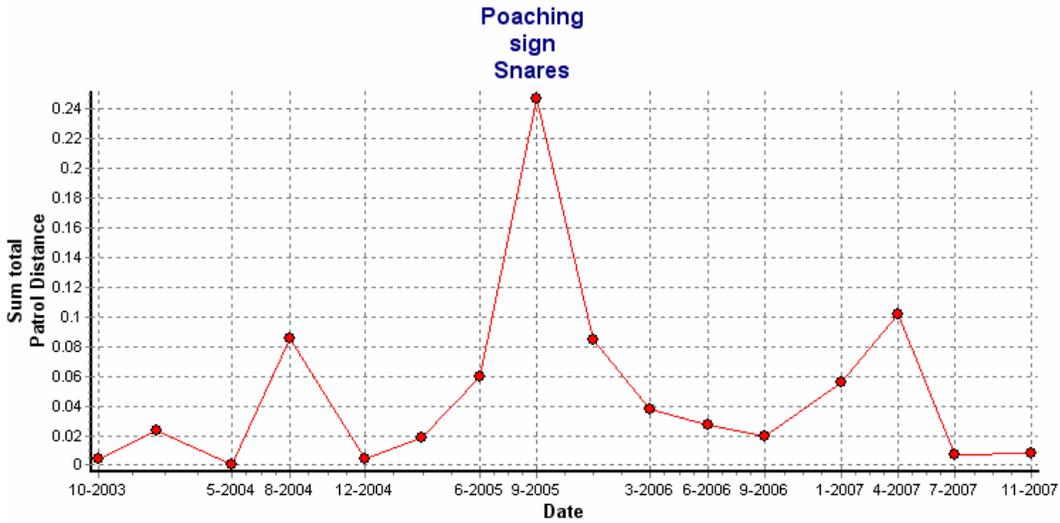


2007



POACHING TRENDS

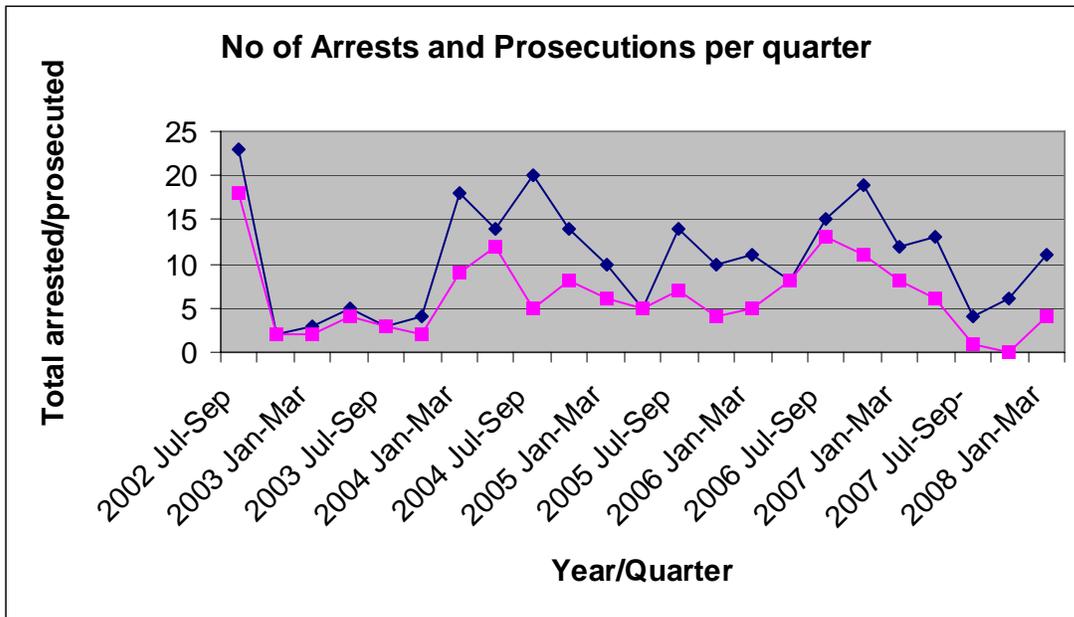
A) Trends in snare removals



According to the trend:

- No of snares/patrol distance increased with a peak in September 2005 after which there was a decrease up to September 2006.
- The sum total of snares collected per patrol distance was generally low owing to intensified patrols.

Trends in Arrests and Prosecutions

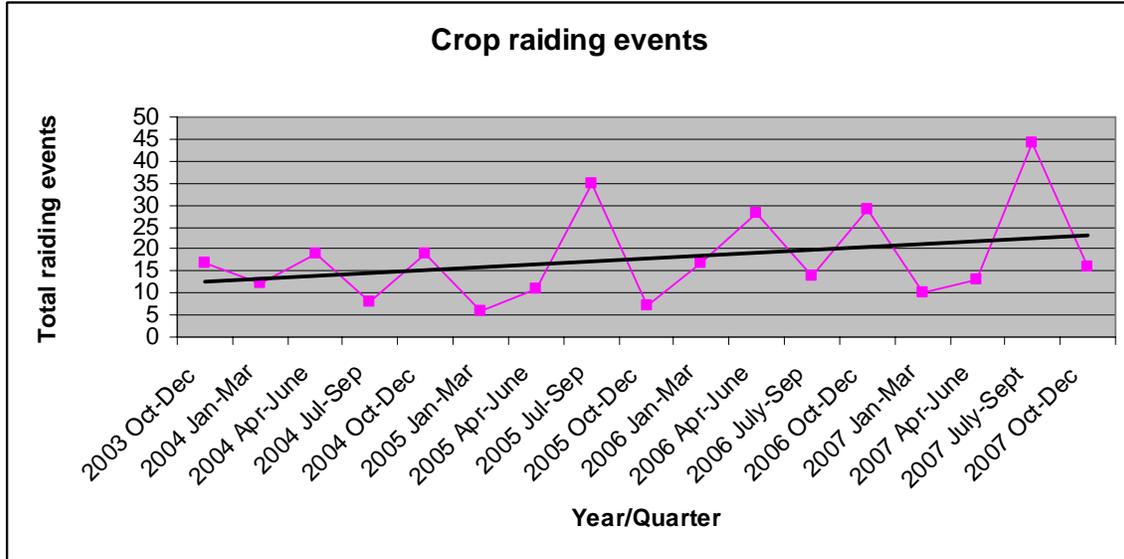


CROP RAIDING

Crop raiding remains a big challenge in KNP. This is attributed to the increased number of elephants, fragmentation of forest fringes, increased human

population and lack of a buffer zone between the park and the communities. Various deterrent measures are being used which include elephant deterrent trenches and scare shooting.

Trend in crop raiding events 2004 - 2007

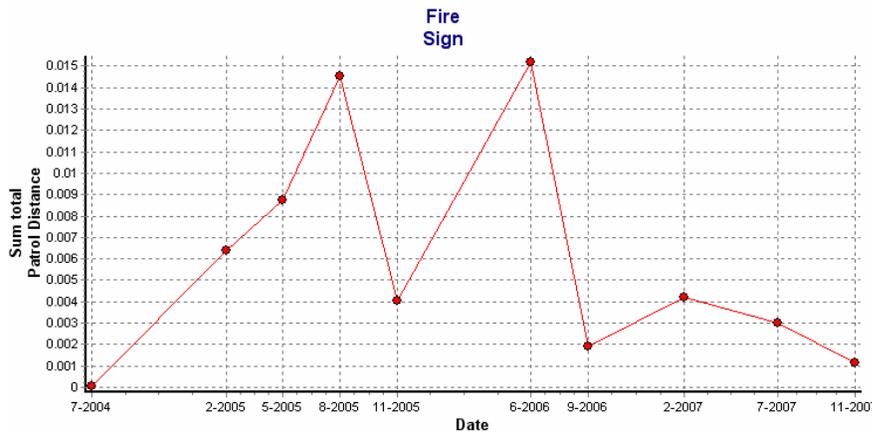


- ✓ The trend line shows a steady increase in raiding events from 2004 to 2007.
- ✓ Peaks are in 2005 July- September and 2007 July September over the reporting period.
- ✓ Trend not increasing at a high rate because of the elephant deterrent trenches being dug in some areas.

FIRES

Fire is no longer a big threat as it used to be in the past. However, some fires are evident especially in the Restoration Area, the former game corridor and Hima area.

The fire trends 2005 – 2007

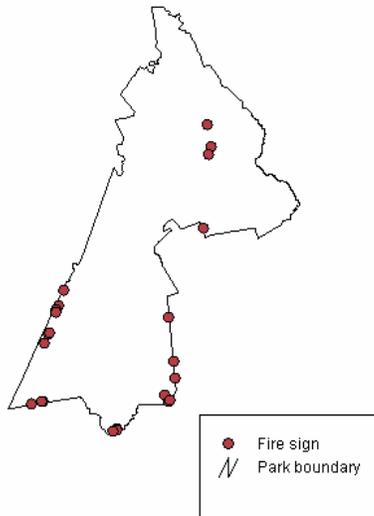


- The trend shows more fire signs in May - Aug 2005 and in June 2006
- Less fire signs from September 2006 to 2007

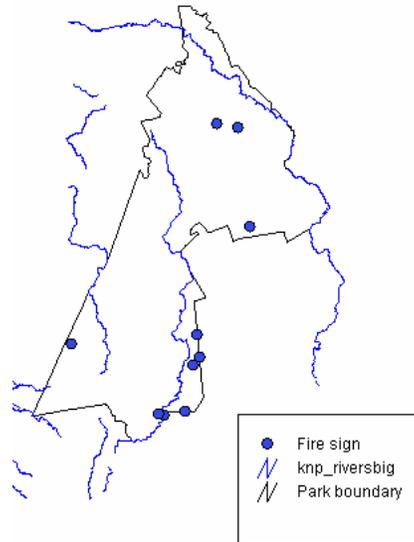
- The encounter rate decreased due to emphasis on fire pre-suppression measures.
- Another reason of low fire signs is as result of forests colonizing former grassland areas.

MAPPING FIRES

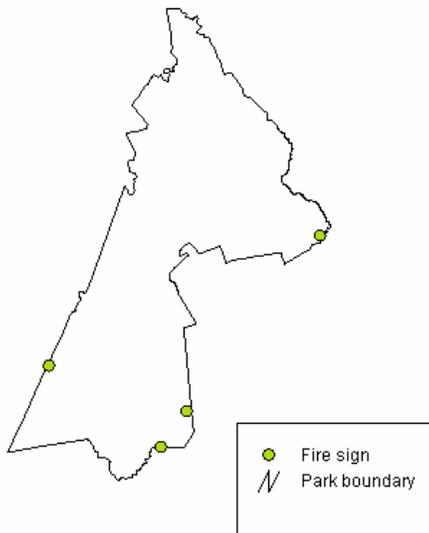
2005



2006



2007



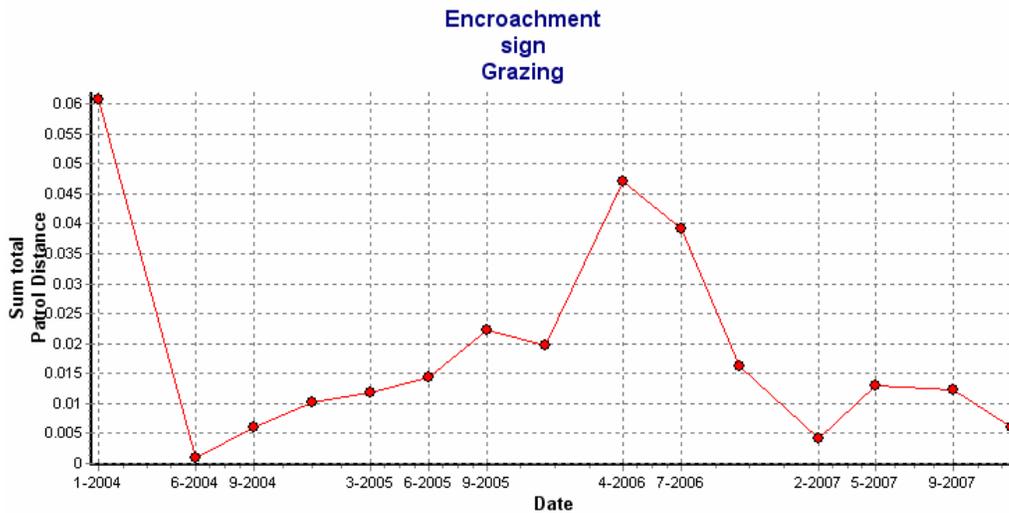
- Most fires were evident around grassland and colonizing bush areas of Ngogo, Nyabitusi, Dura and the game corridor

- The restoration area has no evidence of fires due to fire control pre suppression measures in place
- The fire patterns guides in planning for fire lines and early burning.

Illegal Grazing

During the identification and ranking of the threats in the monitoring plan, grazing was ranked low but ever since, the southern part of the park has experienced incursions owing to the Basongora Pastoral community from DRC who infiltrated the southern part of the park, but currently, the situation is being contained.

KNP grazing signs trend 2004 - 2007



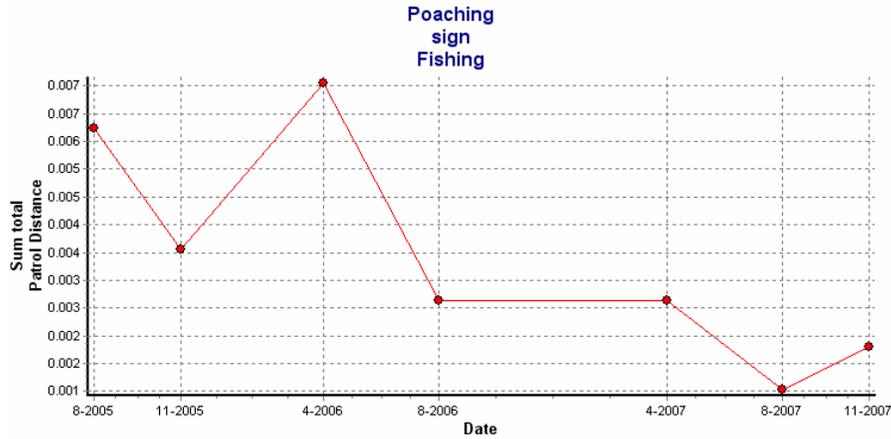
The illegal grazing encounter rate increased from mid 2004 to mid 2006 and there after decreased. This coincided with the influx of the Basongora cows in the southern part. This was then contained by intensified patrols, impounding cows in confinement kraals and fining the owners.

Illegal Fish and Rattan cane harvesting

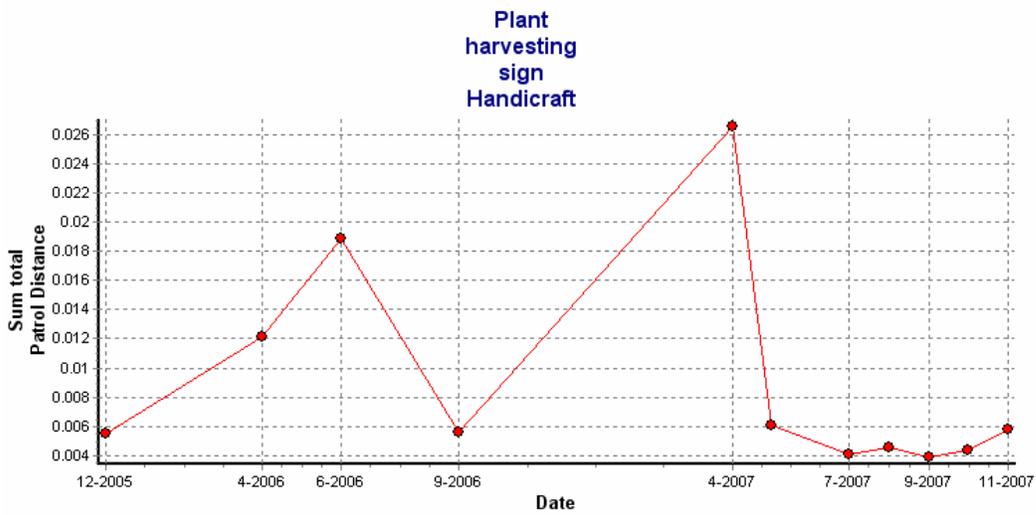
Fish and Rattan cane harvesting ranked high among the KNP threats in the monitoring plan. Fish harvesting has since been regularized and is no longer a big threat to KNP. There is a collaborative resource arrangement, which had been in force and in 2006, a MOU was negotiated and signed for L. Kabaleke, which is the fish-harvesting site. The landing sites are at Kayanja and Kanyateete. The illegal fishing is being contained by ranger patrols.

Rattan harvesting is being done by an organized group called Bigodi – Nyange Women and Handicrafts Group. Monitoring by KNP is being done and the off-take levels are sustainable. This is reflected in the reducing trend in the chart below.

KNP ILLEGAL FISHING TREND 2004 - 2007



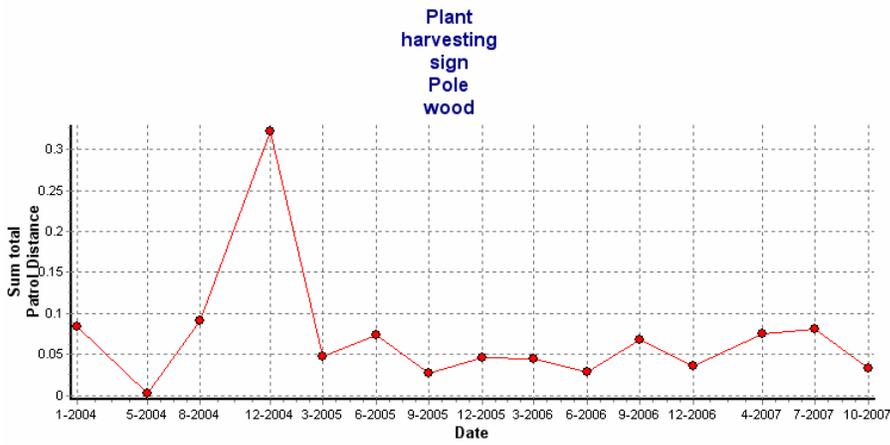
KNP RATTAN HARVESTING 2005 - 2007



KNP Illegal harvesting of plant resources.

The illegal harvesting of plant resources is one of the key threats in KNP. The illegal activities are harvesting of building Poles, charcoal burning, and to a less extent pitsawing. The increase in illegal harvesting is attributed to the high demand due to population increase near the park boundary.

POLE HARVESTING SIGNS TREND

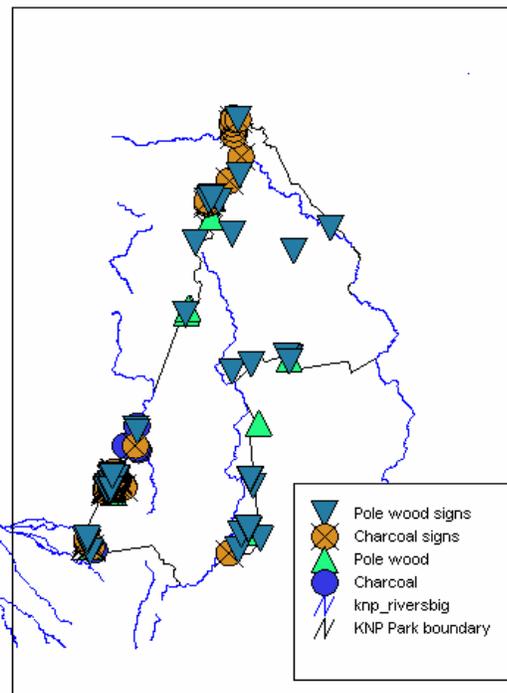
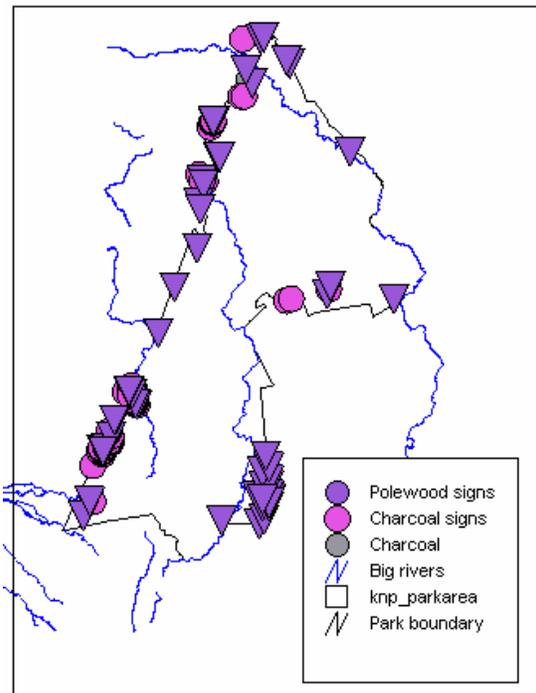


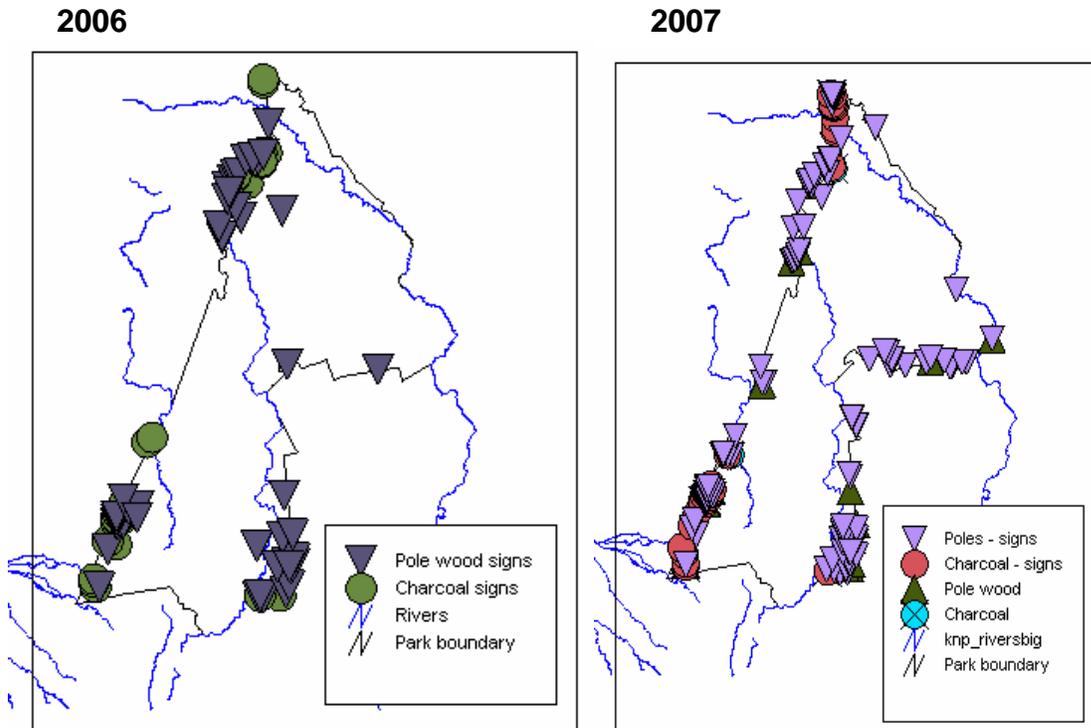
The trend shows high encounter rates, with a peak in December 2004. The signs per patrol distance then decreased to a stable value.

Illegal harvesting of poles/charcoal burning trends

2004

2005





Pole cutting and charcoal burning incidences are more along the boundary than in the interior of the park. Poles are bulky and difficult to carry from the interior and easier to cut quickly along the boundaries without being noticed and arrested by park staff.

The increased population around the park explains the ever-increasing pressure for park resources including the poles for construction and charcoal burning.

RE-RANKING OF THREATS FOR KNP

Original ranking of Threats in order of priority.	New Ranking			Total score	New Rank
	Area	Intensity	Urgency		
1. Poaching	12	11	12	35	1
2. Human wildlife conflict	11	12	11	34	2
3. Fires	8	10	10	28	3
3. Impact of increasing elephant population	3	4	4	11	9
5. Rattan cane harvesting, (removed from new list replaced by)					
Illegal harvesting of resources	10	9	8	27	4
6. Illegal fishing Removed and put under illegal harvesting of resources					
7. Invasion by exotic species	9	7	9	25	5
8. Colonisation of grassland by forest	7	5	1	13	8
9. Illegal timber harvesting	1	2	5	8	11
10. Loss of home range through fragmentation of forest fringes outside the park	6	3	2	11	9
11. Charcoal burning	4	6	7	17	7
12. Grazing	5	8	6	19	6
13. Road kills	2	1	3	6	12

SEMULIKI NATIONAL PARK

Site description

Semuliki National Park (SNP) has an area of 220 km² and is a lowland moist semi deciduous Natural High Forest (NHF) in an area of refugium with Guinea-Congo biome species.

Conservation Targets:

Habitat: Natural high forests, the only lowland semi-deciduous forest in Uganda, Guineo-congolean phytochoria, hot springs, River Semuliki.

Species: Important Bird Area (IBA), mona and debrazza monkeys, chimpanzees, Sitatunga, elephants, rattan cane.

Purpose of SNP

To conserve in perpetuity, Semuliki National Park as a component of the Albertine Rift, with its unique biodiversity, hot springs and culture for the local and the international community.

SNP THREATS

The main threat to the integrity of SNP as identified in the Monitoring Plan is the Illegal harvesting of resources. This was compounded by the presence of the Batwa (Pygmies) in the Park. They have free access to the forest resources ranging from poles, firewood, rattan canes and palm leaves. They supply these forest products to the surrounding communities for money and this impacts on the park. Other threats in order of their importance as per the monitoring plan are:

- Invasion by exotics
- Poaching
- Human wildlife conflict
- Harvesting of rattan canes (*Caramus deeleetus*)
- Illegal fishing,
- Soil erosion and deposition in the PA,
- Wild Fires
- Illegal grazing.

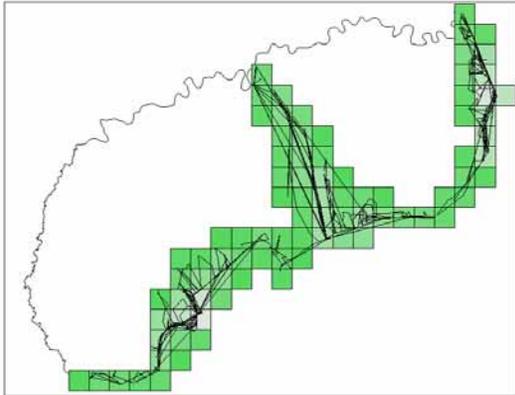
Current strategies

The above threats have been reduced by systematic intensified patrols, arrests and prosecutions, intelligence as well as sensitisation.

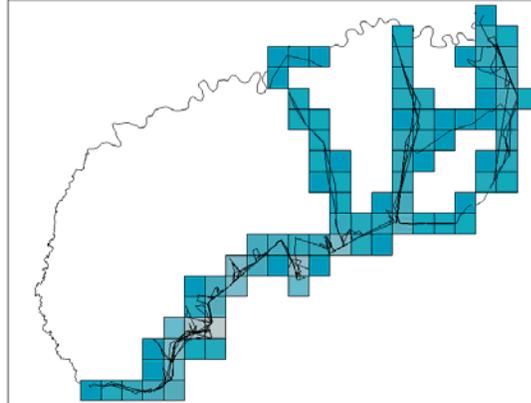
The main challenge during implementation of the monitoring plan was the Insecurity in the area due to rebel Allied Democratic Forces (ADF) incursions, which affected patrols in the most parts of the park. Despite the above, the ranger patrol effort increased from 2005 – 2007 as shown in the distribution maps below.

SNP PATROL COVERAGE MAPS, 2005 - 2007

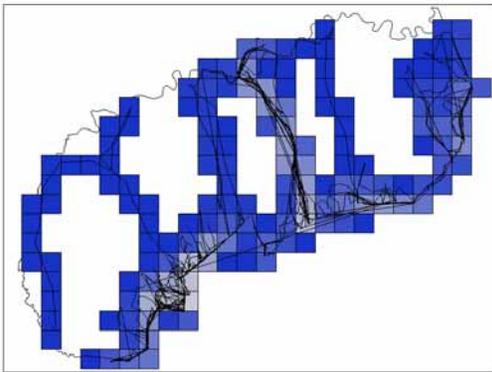
2005



2006

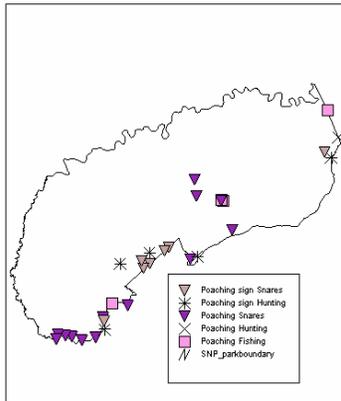


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2007

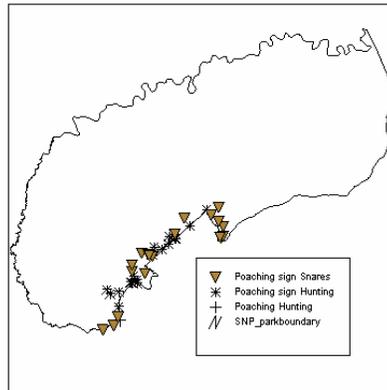


SNP Poaching Distribution Map

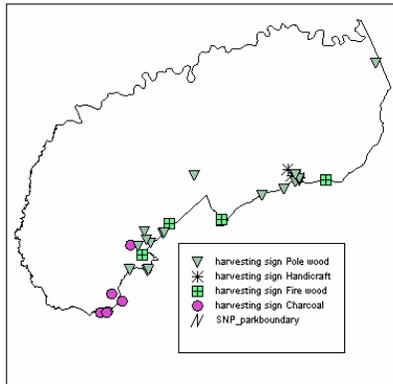
2005



2006



2007

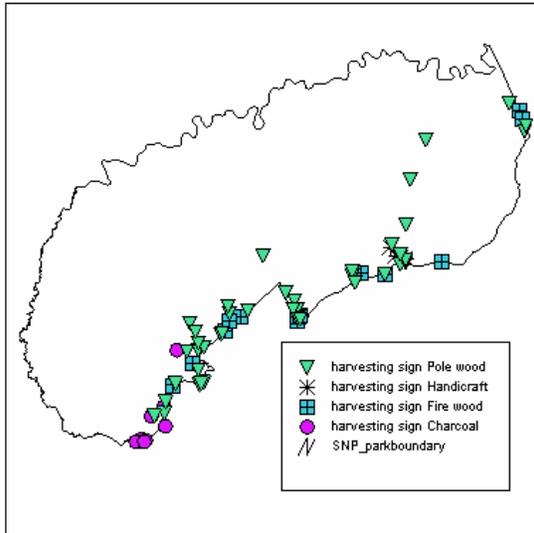


Owing to insecurity, few patrols were conducted leading to low poaching encounters. More signs increased in 2007 due to intensified patrols that resulted in recording more poaching signs.

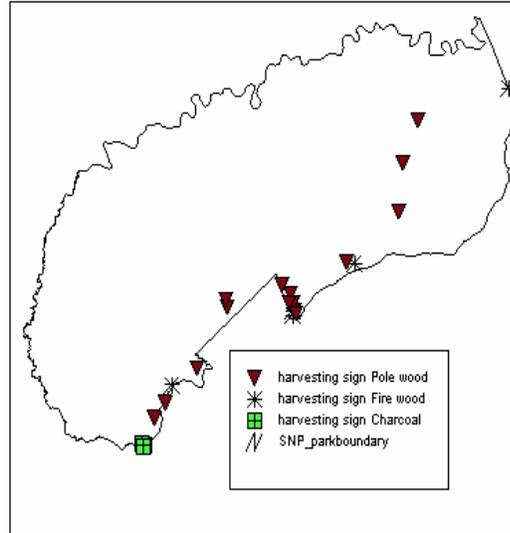
More Poaching signs are seen along the boundary than in the interior. This shows the pattern of ranger patrolling, as it was insecure to patrol deep into the park.

Illegal Plant Harvesting

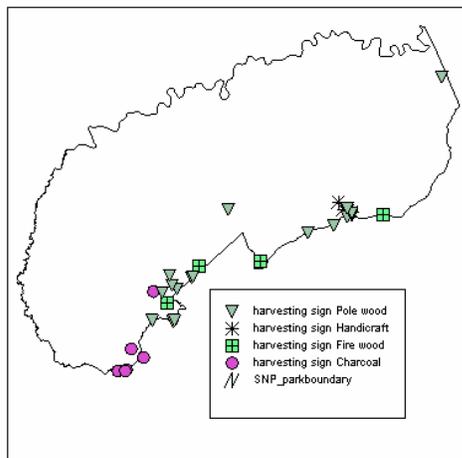
2005



2006

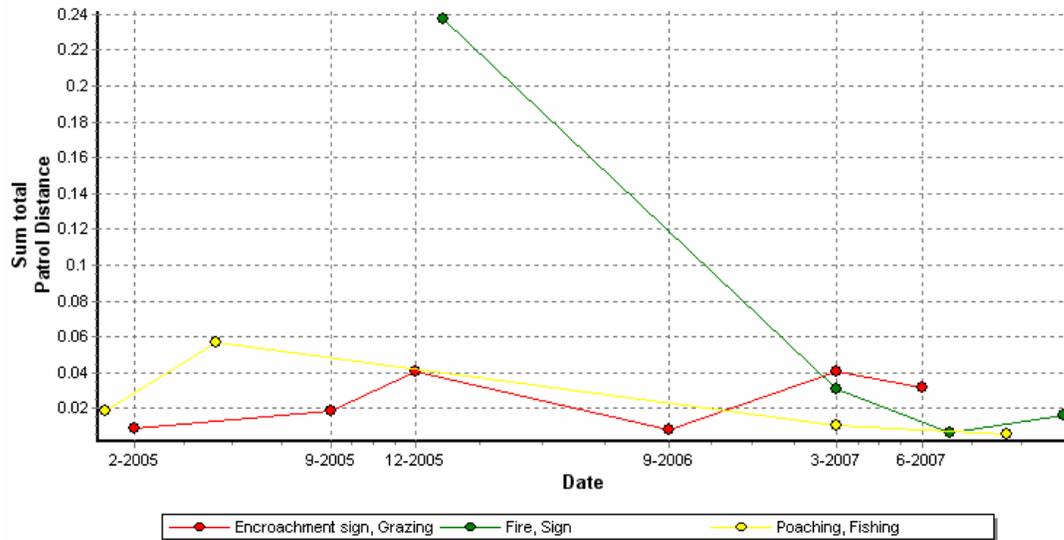


2007



From the distribution maps above, there is a reduction in Pole wood harvesting, firewood and charcoal burning from 2005 – 2007 owing to increase in patrol effort.

Grazing, Illegal Fires and Fishing threats.



The chart trend above shows that illegal grazing threat has increased and surpassed illegal fires and illegal fishing in 2007.

SNP RE- RANKING OF THREATS

Priority	Original Ranking	New Ranking			Total Score	New rank
		Area	Intensity	Urgency		
1	Illegal harvesting of forest resources	8	8	8	24	1
2	Invasion by exotic species.	7	7	7	21	2
3	Poaching	6	4	6	16	3
4	Human-wildlife Conflict.	4	5	5	14	4
4	Impact of resident pygmies in the park (dropped)					
6	Harvesting of rattan canes (dropped) , put under illegal harvesting of resources.					
7	Illegal Fishing	2	3	3	8	7
8	Soil erosion and deposition in the PA	5	6	1	12	5
9	Wild fires	3	2	4	9	6
10	Illegal grazing	1	1	2	4	8

TORO – SEMLIKI WILDLIFE RESERVE

Description – Savannah grassland ecosystem, gallery forest, 543 km² in size.

Conservation Targets

Gallery forest/riverine, open grasslands, wetlands, corridor to Congo, rift valley escarpment (Albertine), Gineo – Congolian phytochoria, river wasa, regional centre of endemism (Sudanian).

Dry habitat chimpanzees, shoebill stock habitats, kob concentrations, Elephants, borassus palms.

Wildlife Population trends

	TSWR	Semliki (Former CHA	TSWR	Semliki (Former) CHA
Baboon	23	15	181	169
Buffalo				41
Duiker		23	15	
Elephant			25	
Giant Forest Hog			5	
Ground Hornbill			35	5
Reedbuck			135	179
Uganda Kob	3460	1606	853	343
Waterbuck	33	8	5	5
Cattle	3182	15157	2454	30071

TORO-SEMLIKI WILDLIFE RESERVE THREATS.

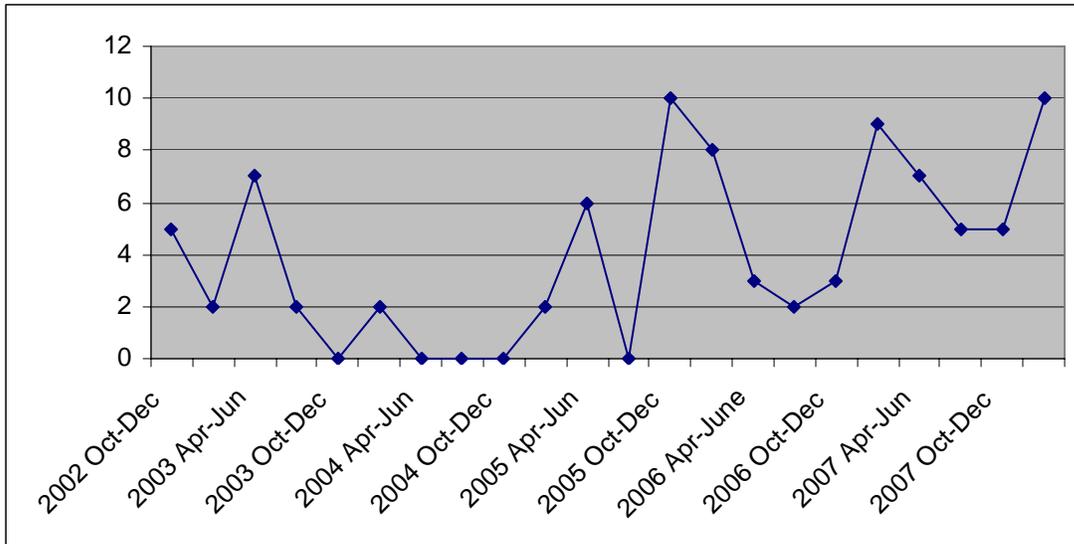
Priority	Threat
1	Illegal cattle grazing
2	Poaching
3	Wild Fires
4	Un-clear boundary
5	Tree cutting (Firewood, poles and charcoal)
6	Increasing human settlements in Ntoroko
7	Encroachment (Agriculture and settlements)
8	Reduction of game corridor
9	Siltation
10	Exotic/invasive species
11	Infrastructure development (public road in PA)
12	Infrastructure development (oil)

Illegal cattle grazing

TSWR is neighbouring Batuku Pastoral communities, (to the North), with large herds of cattle, which impacts, on the Reserve through illegal grazing. This was compounded by the Presidential directive following the refugees' influx from DRC in 2002, where they were allowed to graze in part of the reserve till when the situation normalised in their country.

With the refugees, having gone back home, coupled with intensified patrols and sensitisation, illegal grazing is now decreasing.

Poaching Arrests Oct 2002 – March 2008

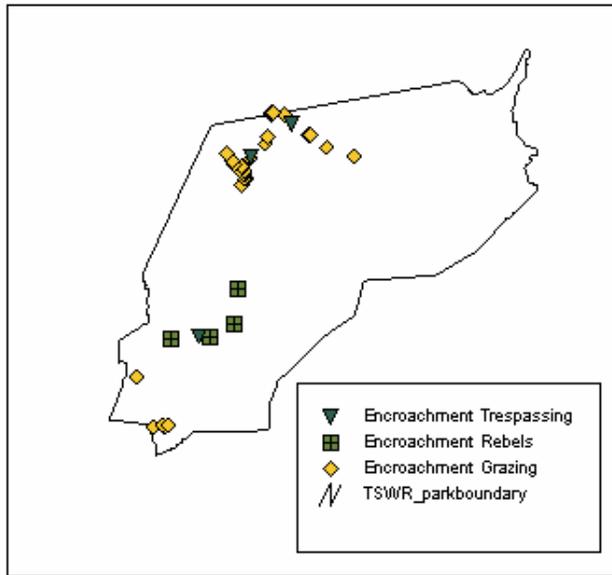


The poaching in 2003 – 2004 was low due to opening of outposts in Makondo, Rwenzuza and Kachwankumu. This was reflected in low number of arrests

Owing to insecurity in the PA in 2005, some outposts were closed and poachers took advantage. Fluctuations in number of arrests was because of surprise patrols that result in high number of arrests while the patrol that follows result in low numbers because poachers become aware as the previous arrests are still fresh in their minds.

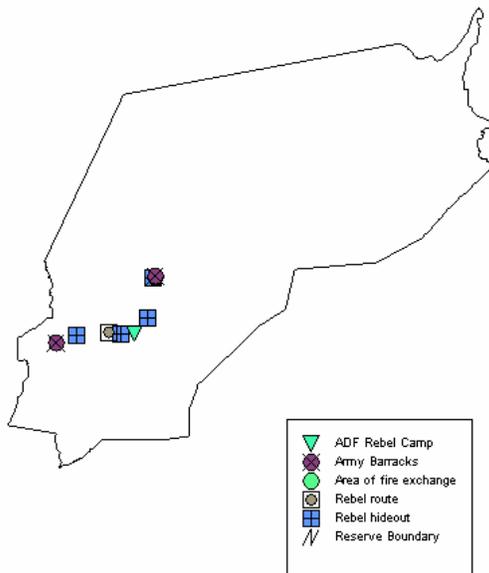
The increase in poaching activities increased during dry season when animals concentrate in places where there is water. Poachers take advantage and also the fact that the PA is always burnt during the dry season and poachers can easily sight the animals

TSWR Encroachment 2007



The distribution map above shows encroachment in 2007. More Grazing was recorded in the Northern areas that neighbour the Rwebisengo pastoral communities. The mapping of the rebel hideouts helped in subsequent joint patrols by the ranger force and other security agencies

TSWR INSECURITY THREAT 2007



Insecurity led to closing of the outposts of, Makondo and Kachwankumu and rangers from Kijura outpost were shifted to the next trading centre. This also led to a temporary closure of Semuliki Safari Lodge

RE-RANKING OF TSWR THREATS

Priority	Original Ranking	New Ranking			Total Score	New rank
		Area	Intensity	Urgency		
1	Illegal grazing	8	10	10	28	1
2	Poaching	9	9	9	27	2
3	Wild Fires	10	8	5	23	3
4	Un-clear boundary ((dropped)					
5	Tree cutting Firewood, poles and charcoal	7	6	6	19	4
6	Increasing human settlements in Ntoroko	1	1	1	3	10
7	Encroachment (Agriculture and settlements) (dropped)					
8	Reduction of game corridor	3	7	7	17	6
9	Siltation (dropped)					
9	Exotic/invasive species	6	4	4	14	7
11	Infrastructure development (public road in PA) (dropped)					
12	Infrastructure development (oil)					
	Waste management (Added)	5	5	8	18	5
	Road Kills (Added)	2	2	2	6	9
	Human-wildlife conflict (Added)	4	3	3	10	8

KATONGA WILDLIFE RESERVE (KWR)

SITE DESCRIPTION

Katonga wildlife reserve covers 208km² of undulating hills and verdant swampland. It is composed of wooded acacia/combretum, grading into wooded grassland, punctuated by strips of riverine forests and woodland

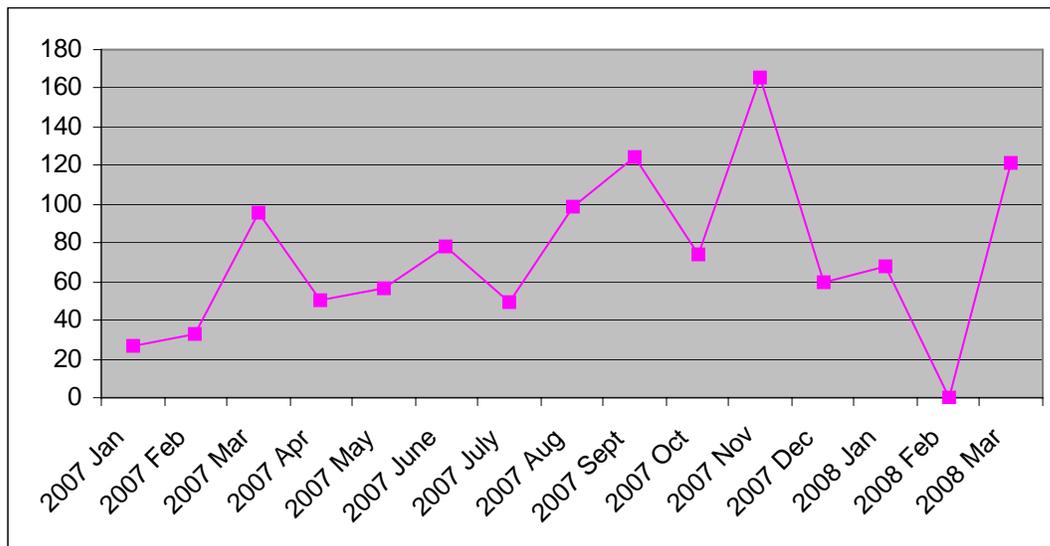
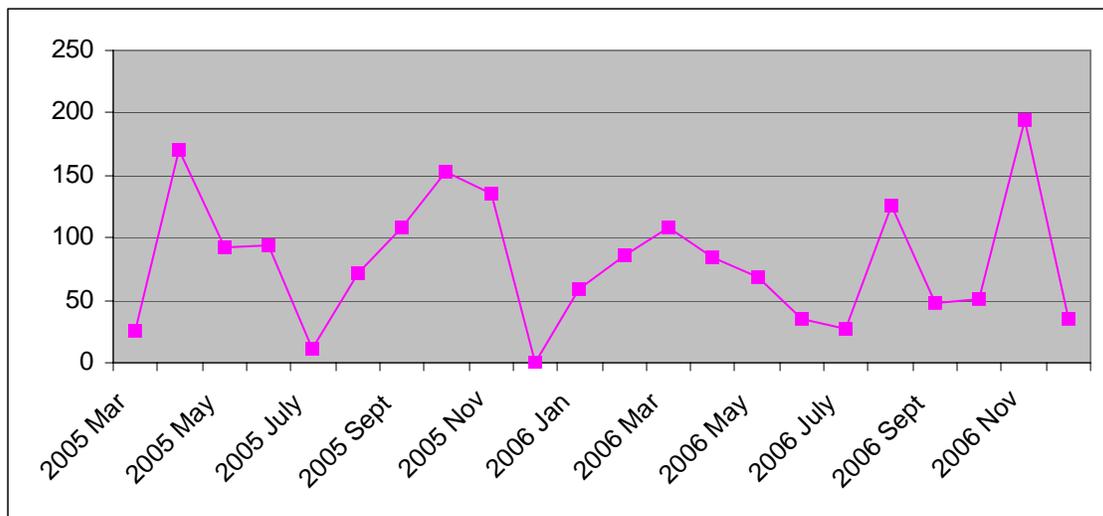
Habitat:

Swamps, woodland acacia/combretum, riverine forest, river Katonga

Species

Sitatunga, water chevrotain, papyrus yellow warbler, high bird species richness, elephants.

KWR Rainfall Patterns



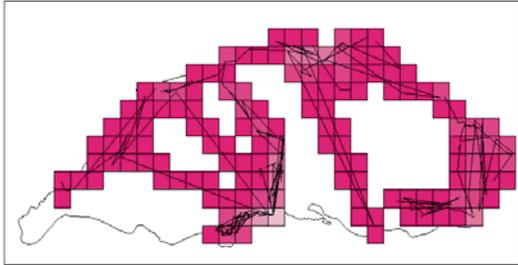
KWR THREATS

The M& R Plan 2003 – 2008 for Katonga identifies the following threats in order of their priority

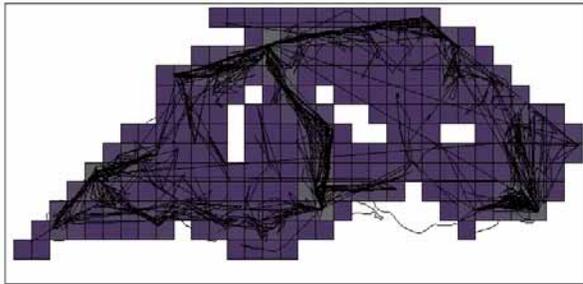
Priority	Threat monitored	Indicator
1	Grazing	No of arrests and fines/month. No of cattle impounded per month. Location of grazing incidences/month
2	Unclear boundary	Size of boundary marked (Km) No of cairns uprooted/km. No. of encroachers identified /km
3	Game poaching	No of poachers arrested per month. No of snares and carcasses/km walked/month. No of armed exchanges with poachers/month. Mammal densities. GPS points of poaching activity
3	Occurrence of water sources in the reserve	No of watering points inside. Daily records of registered users. No of MOUs developed and signed/month. No of letters of requests by the communities/month
5	Human – wildlife conflict	No of conflicts reported/month. No of offenders arrested. No of animals or people injured/month
6	Occurrence of mailo land in the reserve	No of mailo landowners identified and registered. No and type of property assessed and registered per year
7	Invasion by exotic species	Boundary of area covered/species/year. GPS locations/year. Species involved/year.
8	Occurrence of wild fires	No of fire incidences/month. Size of area burnt per fire incidence
9	Colonisation of grassland patches by acacia	Size of area colonised/year. Frequency of sighting waterbucks outside in relation to those inside.
10	Pollution of river Katonga	Level of concentration of acaricide in the river

KWR PATROL COVERAGE 2003 – 2008

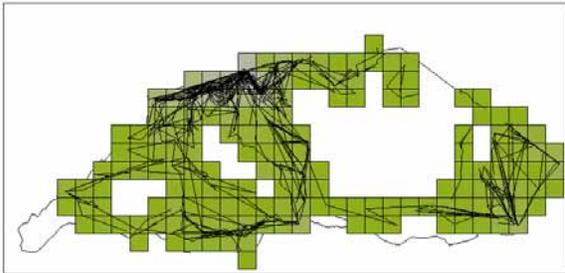
2003



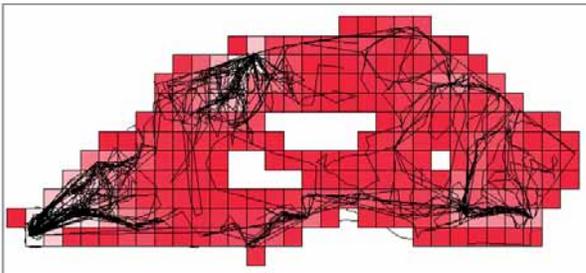
2004



2005

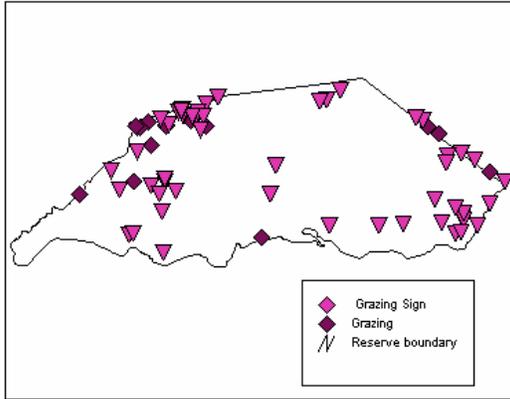


2006

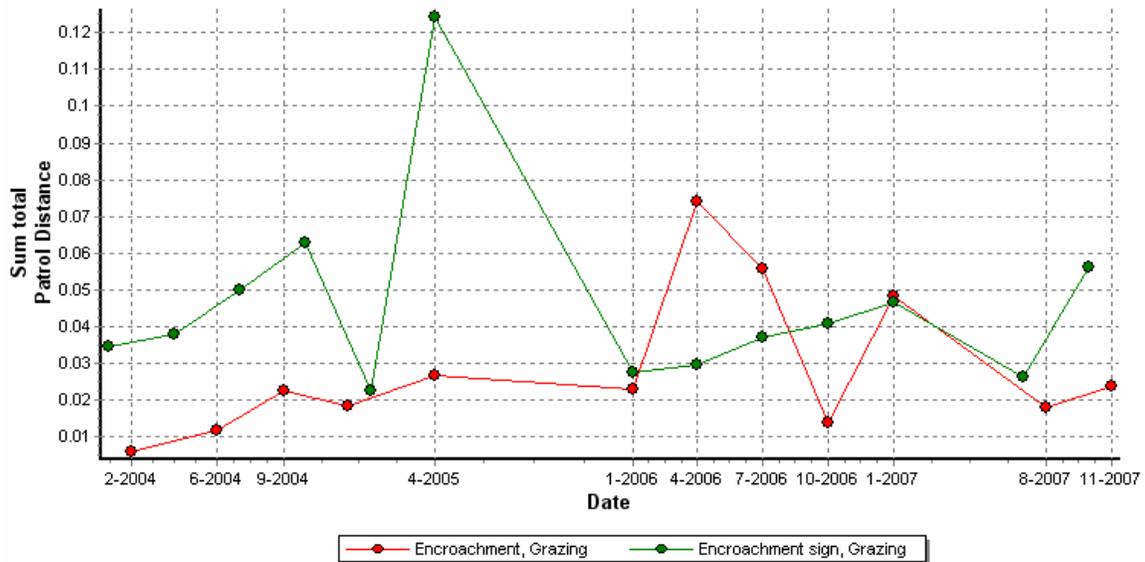
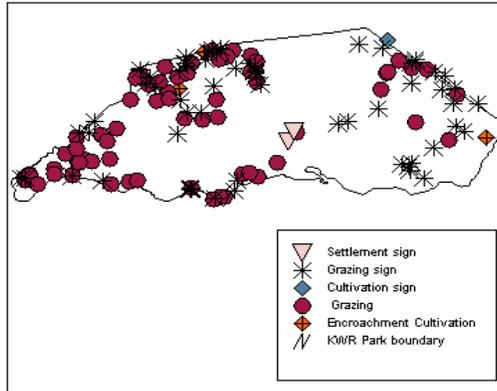


ILLEGAL GRAZING TRENDS

2005



2006

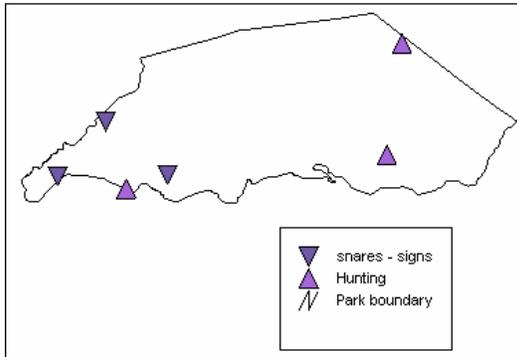


The trends in illegal grazing in KWR remains a big challenge due to Land title holders within the reserve. The trend shows that grazing has persisted though it was contained up to Jan 2006.

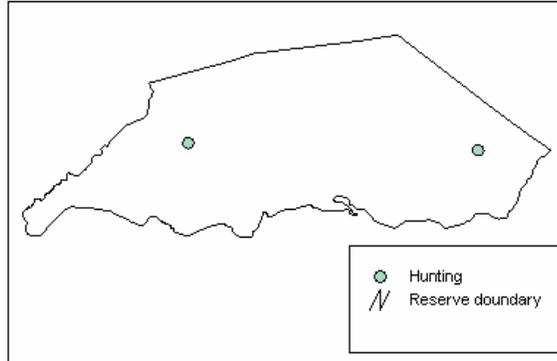
Some outposts were then closed due to less man power and this led to shooting up of illegal grazing. In 2007, grazing again decreased due to increase in manpower when new staff was deployed in KWR.

Poaching distribution Map

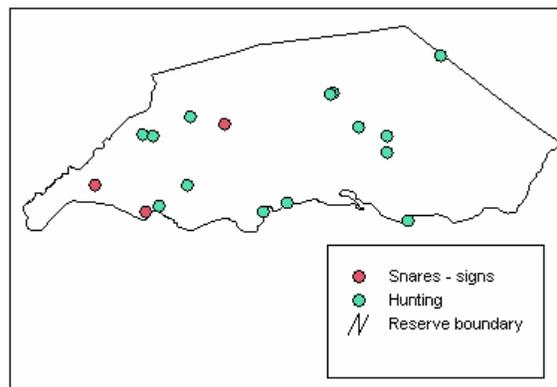
2004



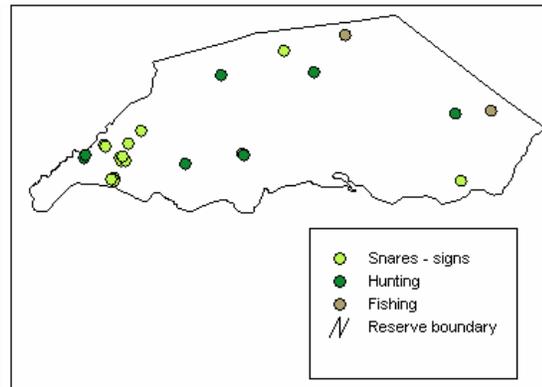
2005



2006

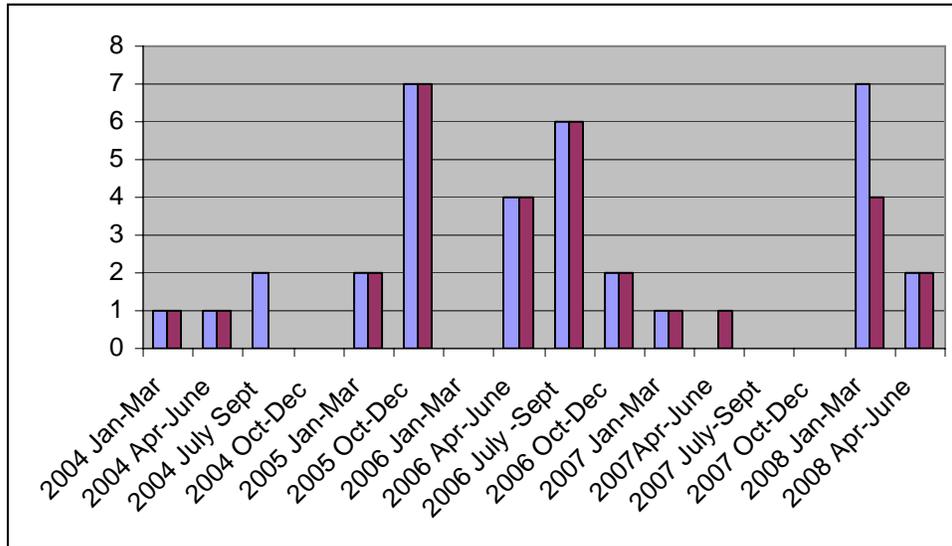


2007



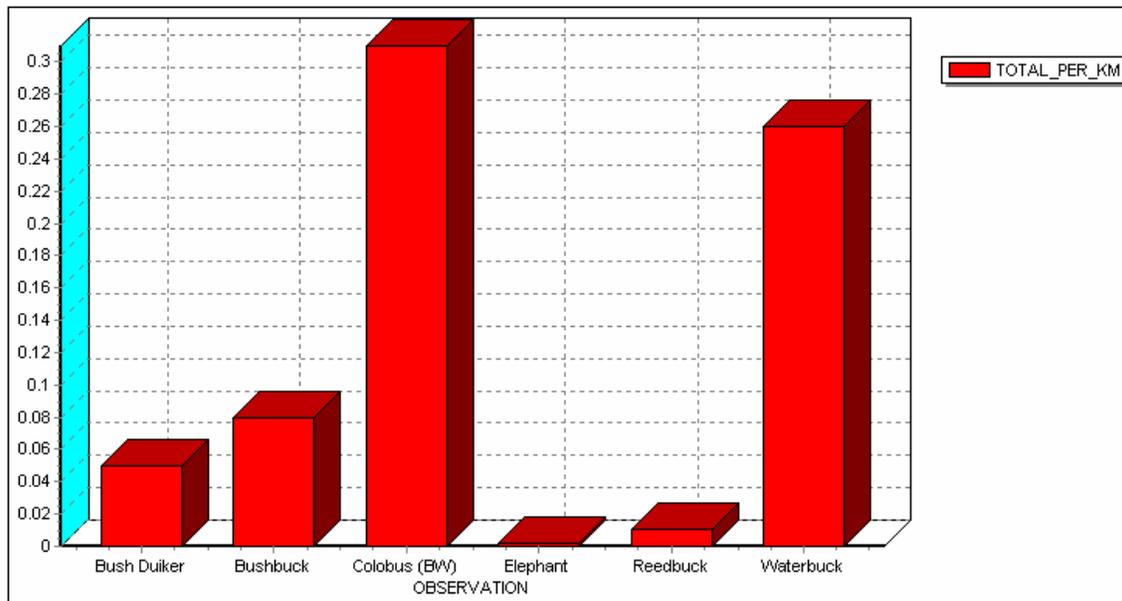
Snare removal intensified in 2006 because of reduction in the illegal grazing which gave ample time for rangers to start concentrating on poaching and the removal of snares.

KWR Poacher arrests and Prosecutions 2004 – 2008



Many arrests and prosecutions registered in 2008 is attributed to the reduction in illegal cattle grazing and concentrating on the poaching activities hence more arrests.

Mammal Sightings 2007



RE- RANKING OF KWR THREATS

Priority	Original Ranking	New Ranking			Total score	New rank
		Area	Intensity	Urgency		
1	Grazing	11	11	10	32	1
2	Un-clear boundary (dropped)					
3	Poaching	10	9	9	28	2
3	Occurrence of water sources in the reserve (dropped)					
5	Human-wildlife conflict.	8	7	7	22	5
6	Occurrence of mailo land in the reserve	3	10	11	24	4
7	Invasion by exotics	6	5	6	17	7
8	Occurrence of wildfires	5	3	3	11	9
9	Pollution of river Katonga	4	4	4	12	8
10	Colonisation of grassland patches by acacia	7	6	5	18	6
	Political Intervention (Added)	1	2	2	5	10
	Soil erosion and siltation (Added)	2	1	1	4	11
	Illegal resource harvesting (Added)	9	8	8	25	3