

Total Aerial Count of Elephants, Buffaloes, Roan Antelope and other Wildlife Species in Yankari Ecosystem, Nigeria

By

P. Omondi¹, R. Mayienda², J.H. Mshelbwala³ & M.S. Massalatchi⁴

**All correspondences
E-mail: 1pomondi@kws.org**

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EXECUTIVE SUMMARY

The total aerial count of elephants for Yankari ecosystem was conducted from **3rd July – 8th July 2006**. One Cessna 172 aircraft fitted with GPS was used in navigation, recording survey paths and waypoints. Total counts of elephants and other wildlife species were done and livestock numbers were estimated. A total of 348 elephants were counted in two different herds of 268 and 80. Both herds were aggregated around Wicky camp in the central part of the reserve. This represents an increase of 6.1% or 20 more elephants compared to 1999 estimate of 328 individuals. The total number of carcasses recorded was 13 giving a carcass ratio of 3.73%. This ratio is high and if used as a relative index of poaching levels then the situation in the ecosystem could be a cause of concern, though the age of the carcasses (old & very old) needs to be kept in mind.

About 8,884 heads of livestock and over 500 farmlands and human settlement were estimated in the conservation area. This signifies a high level of human activities in the area and thus a high potential for loss of range for the elephants and illegal killing.

INTRODUCTION

Prior to 1999 little was known of Nigeria's elephants, but various reports suggest that during the 20th century many herds were either reduced in numbers or lost completely. Apparently there were no more than 3,000 elephants in Nigeria (Sanchez Arino, 1974) before the Biafra war (1967-1970). In 1991 informed guesses put the country's elephant population at about 1,500 with only five potentially viable populations (Dougherty, 1994; Natural Resources Conservation Council, 1991). According to the African elephant Status Report (Blanc et al, 2003), there are 478 definite; 340 probable and 300 speculative elephants bringing the country's speculative estimate to 1,018. These elephants live in small, relict populations, divided between forest and savannah in the south and north of the country. Most elephant populations are small, fragmented and probably unviable in the long term. It is believed that Yankari elephant population is one of those that have potential of survival, if proper management strategy is put in place.

Yankari Game Reserve is one of the Nigeria's MIKE sites and is believed to hold the largest elephant population in Nigeria. It is Nigeria's first Game Reserve with an area of 2, 244 sq km. It is situated within Duguri, Pali and Gwana Districts of Alkaleri Local Government Area of Bauchi State. It was created in 1956 as a Game Reserve, and later upgraded to National Park status in 1991. The Park has to date been changed to Game Reserve status under the administration of Bauchi State (Mshelbwala pers comm. 2006)

The 2006 total aerial count was undertaken as part of the CITES MIKE programme to determine the baseline status of Yankari's elephant population.

Many attempts had earlier been made to estimate Yankari elephant population. Sykes estimated 140 elephants in 1964; Block in 1969 estimated 170 elephants; Henshaw, 1975 estimated less than 100 elephants; Marshall, 1980 estimated 280 elephants and Nicholas A., 1999 using a powered parachute undertook a systematic aerial census that counted 328 elephants. The count recorded a 3.8% annual growth based on Henshaw (1975) estimate. Given the disparities in counting methods and the growing length of time since the last survey in 1999, it was important to get an up to date population estimate.

Objectives of the Survey

The objectives of the survey were to:

- Establish the current population size and distribution of the elephant population
- Determine the number and distribution of elephant carcasses
- Set a baseline for future change in the elephant population size and distribution
- Document the distribution and numbers of other species such as buffalo, roan antelope and livestock.
- Train Nigerians in the methods of aerial counting of elephants
- Map the incidences of human activities that may be threatening elephants through protected area encroachment

STUDY AREA

The study area encompasses Yankari Game Reserve (2, 244 sq. km) and an additional 1,000 sq km of the surrounding dispersal areas, bringing the total area to about 3,244 sq km (Fig. 1). The park is located at 9.50 degrees north and 10.30 degrees east in the south-central area of Bauchi State in northeastern Nigeria, in the southern portion of the Sudan Savannah zone. Access to the park is gained mainly through a tarmac road branching off the Federal high way leading to Gombe from Bauchi at a small village called Dindima on the banks of the Gongola River. The parks main entrance is at Mainamaji village, about 29 km from Dindima. The basin of the Gaji River and its tributaries is the only watershed in the park. Elephants and other animals depend on this water source, especially in the dry season. The Gaji river valley, used by elephants in the dry season, is estimated by Marshal (1985) to be about 40 sq km. The dry season in Yankari Game Reserve has been known to begin around November and last until May, with March and April being extremely hot. Rains generally commence in late April.

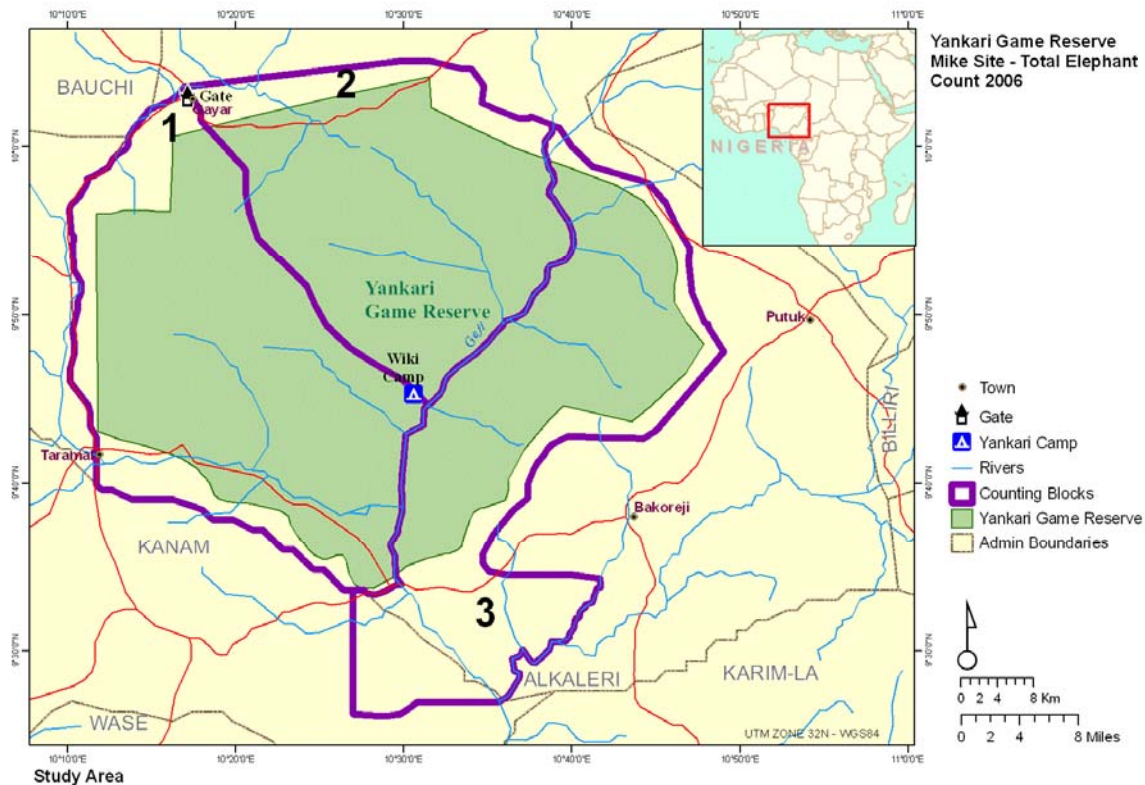


Figure 1

Geology

The park is almost entirely underlain by the Kerri formation of tertiary age composed of sandstone, siltstones, kaolinites and grits. This in turn is underlain by the Gombe formation of Cretaceous age composed of sandstones, siltstones, shales and ironstones. The valleys of the Gaji, Yashi and Yuli rivers are filled with alluvium of recent age. Sandy loams and clay soils of riverine alluvium occur in the valley of the Gaji, Yashi and Yuli Rivers. East of the Gaji valley is a 5 to 7km wide band of very poor sandy soils that support a shrub savannah formation.

Flora and Fauna

Geerling (1973) described the vegetation as one belonging to a complex of *Burkea africana*, *Combretum glutinosum* tree and woodland savannah. This is a savannah of trees and shrubs with an open canopy and a continuous layer of annual and perennial grasses. However, the Bauchi State Atlas (Arka cartographic ltd. 1989) classifies the vegetation of the park as belonging to a savannah low land complex.

The park contains a significant number of mammalian species some of them recognised by the International Union for the Conservation of Nature, (IUCN) as being of great

conservation concern. These include the Buffalo, (*Syncerus caffer*), Elephant, (*Loxodonta africana*), Baboon, (*Papio Anubis*), Lion, (*Panthera Leo*), Hippopotamus (*Hippopotamus amphibius*), Warthog, (*Phacochoerus aethiopicus*), Waterbuck, (*Kobus ellipsiprymus*) Bush buck (*Tragelaphus scriptus*), Roan antelope (*Hippotragus equinus*) and Western Hartebeest (*Alcelaphus buselaphus major*).

METHODOLOGY

Training of the crew

Total aerial counts rely heavily on the experience of counting crew. Two days of training and test flights were undertaken for both the pilot and the counting crews. Flight crews were instructed in their roles as detailed in the briefing notes (Appendix 1), which have evolved from those written by Norton-Griffiths (1978) by incorporating the use of GPS technology.

Census zone and counting blocks

The census area included the entire Game Reserve and the buffer areas and covered an area of 3,244 sq km. The survey area was divided into 3 discrete counting blocks, bordered by well-defined features such as roads, rivers, and the Reserve boundary (Fig 1). Each crew was provided with flight maps of the block for the pilot and Front Seat Observer (FSO). Flight paths to cover each block were then selected by Pilot, FSO and GIS expert. In most cases these ran East-West, unless topography made a North-South or alternative pattern desirable. Transects were spaced at 1 km interval and only spaced 1.5 km in two of the transects where visibility was very open (Fig 2). The area of each block is shown in Table 1

Table 1

Block No.	Area in Km²
Block 1	1,215
Block 2	939
Block 3	1,070

Census Method

The survey adopted the total aerial survey standards for the MIKE programme as detailed in Craig G.C, 2004 and as described in Omondi et al 2002 and Douglas-Hamilton, 1997. The count therefore employed the Global Positioning System (GPS) technique with ArcView software used for plotting species distribution maps.

One Cessna aircraft was used in the count. The aircraft had a GPS for use in navigation and recording survey paths. All observations made were saved in the GPS

as waypoints with the geographical location referenced and were used in producing species distribution maps. The GPS was downloaded onto a computer at the end of each day's operation and the Front Seat Observer (FSO) and the crew produced a summary table of each block. Any double counts were identified and eliminated during these sessions. The exercise started every morning at 7.30 am and ended late in the evening. Breaks were taken during refuelling of the aircraft and at lunch. The survey crew consisted of 1 FSO and 2 Rear Seat Observers (RSO).

RESULTS

A total of seven persons drawn from the Nigerian Federal Ministry of Environment, Abuja; Yankari Game Reserve; the MIKE West African Sub Regional Office and two private pilots were successfully trained on the techniques of total aerial count of elephants and were involved in the exercise as either Pilot, GIS expert or rear seat observers. A total of 18:08 hrs was flown during the exercise, with a total count time of 14:43 hrs giving a search rate of 220 km per hour. Fig 2 shows the flight patterns of the Cessna aircraft involved in the count.

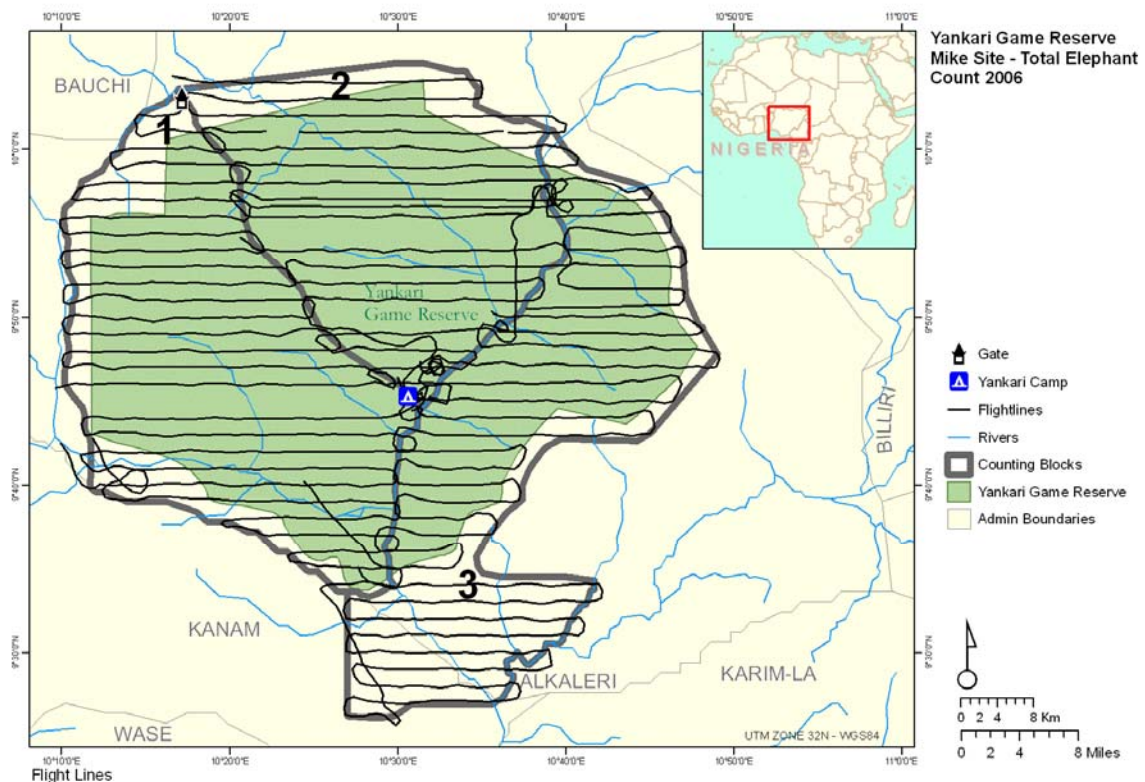


Figure 2

Table 2 provides the flight summary details of the flight logs provided in appendix 4.

Table 2: Flight summary (*NB: Distance does not include ferrying distance to and from the blocks*)

Date	Take off time	Block	Start Count	End Count	Land time	FSO	RSOL	RSOR	Pilot	Dist. (kms)
03-Jul	07:45	1	08:02	11:25	11:26	PO	JM	TDJ	JH	428
03-Jul	16:23	1	16:45	18:18	18:45	PO	TU	TDJ	JH	216
04-Jul	07:45	1	08:20	09:05		PO	TU	TDJ	JH	
		3	09:14	10:40	11:38	PO	TU	TDJ	JH	353
04-Jul	16:04	3	16:42	18:00	18:23	PO	TU	TT	JH	192
05-Jul	Aircraft malfunction / no flights									
06-Jul	16:23	3	16:58	18:17	18:47	PO	TU	TDJ	JH	194
07-Jul	12:48	3 and 2	13:23	14:24	16:21	PO	TT	TDJ	JH	359
08-Jul	09:14	2	09:37	12:14	12:34	PO	TU	TT	JH	404

On the request of the state government, all species were counted in order to ascertain species diversity, distribution and status. Dead elephants were also counted and their distribution mapped. The carcasses were categorised as described by Craig C. (2005):

- 1 **Carcass 1 (C1):** for **fresh** carcass (less than 1 month old), still has flesh giving the body a rounded appearance. Vultures probably present and ground still moist from body fluids.
- 2 **Carcass 2 (C2):** for **recent** carcass (more than 1 month old but less than one year old), the rot patch and skin still present. Skeleton not scattered.
- 3 **Carcass 3 (C3):** for an **old** carcass (more than a year old), where only a skeleton is present with white bones visible. Vegetation re-grown in rot patch.
- 4 **Carcass 4 (C4)** for a **very old** carcass (up to ten years old), where the bones are grey and cracked and widely scattered so the carcass does not stand out as a distinct entity. Difficult to spot from the air.

All Species Totals

A total of 11 wildlife species were counted (see Table 3, Fig. 3), the majority of which were found in the southern parts (blocks 1 & 3). The count recorded very low other species numbers. Only 28 buffalos were recorded during this count, representing a decline of 81% based on Nicholas (1999) estimate of 148 buffalos. Other species counted include Roan Antelope and Western Hartebeest with estimates of 75 and 68 respectively.

Table 3: All Species counted in the Yankari Conservation Area

BLOCK	BF	BA	C1	C2	C3	C4	CT	E	FL	GD	OB	RA	SH	ST	WB	W A	WHB
1	22	5	0	1	0	1	1,456	268	111	2	3	13	410	54	17	4	44
2	2	35	0	1	0	1	1,167	80	31	0	1	29	2	13	8	0	7
3	4	7	0	1	5	1	5,605	0	64	3	2	33	254	52	9	6	17
TOTAL	28	47	0	3	5	3	8,228	348	206	5	6	75	666	119	34	10	68

BF- Buffaloes; BA-Baboons; C1- Fresh Carcass; C2-Recent Carcass; C3- Old Carcass; C4-Very Old Carcass; CT-Cattle; E- Elephants; FL-Farmlands; GD- Grimm's Duiker; OB- Oribi; RA- Roan Antelope; SH- Shoats; WB-Waterbuck; WA-Warthog and WHB-Western Hartebeest

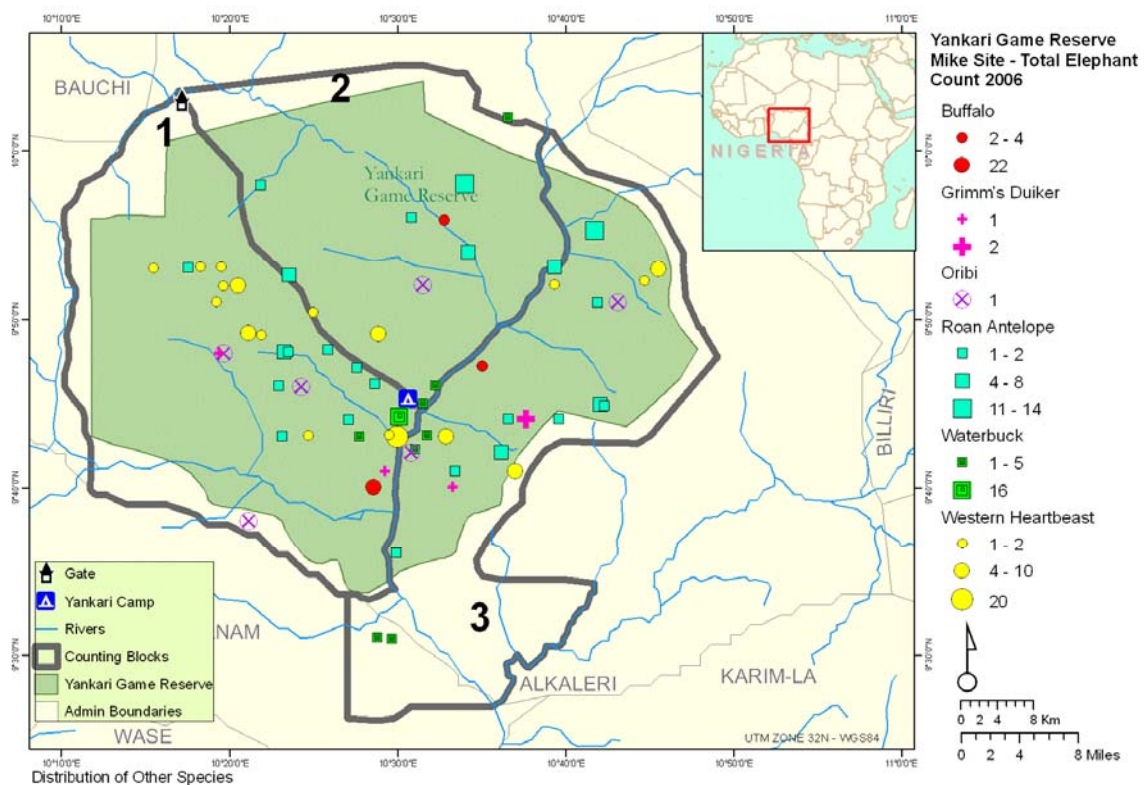


Figure 3

Elephants & Elephant Carcasses

A total of 348 elephants were counted and were aggregated into two large mixed groups of 80 and 268 (which was composed of a core of 250 with a subgroup of 18). The elephants were ranging within the confines of Wicky Camp. Thirteen carcasses were counted during the count. Most of the carcasses were sighted in areas where there were presence of livestock, farmland and human settlement (Fig 4). Fig. 4 below represents elephant and carcass distribution within the study area.

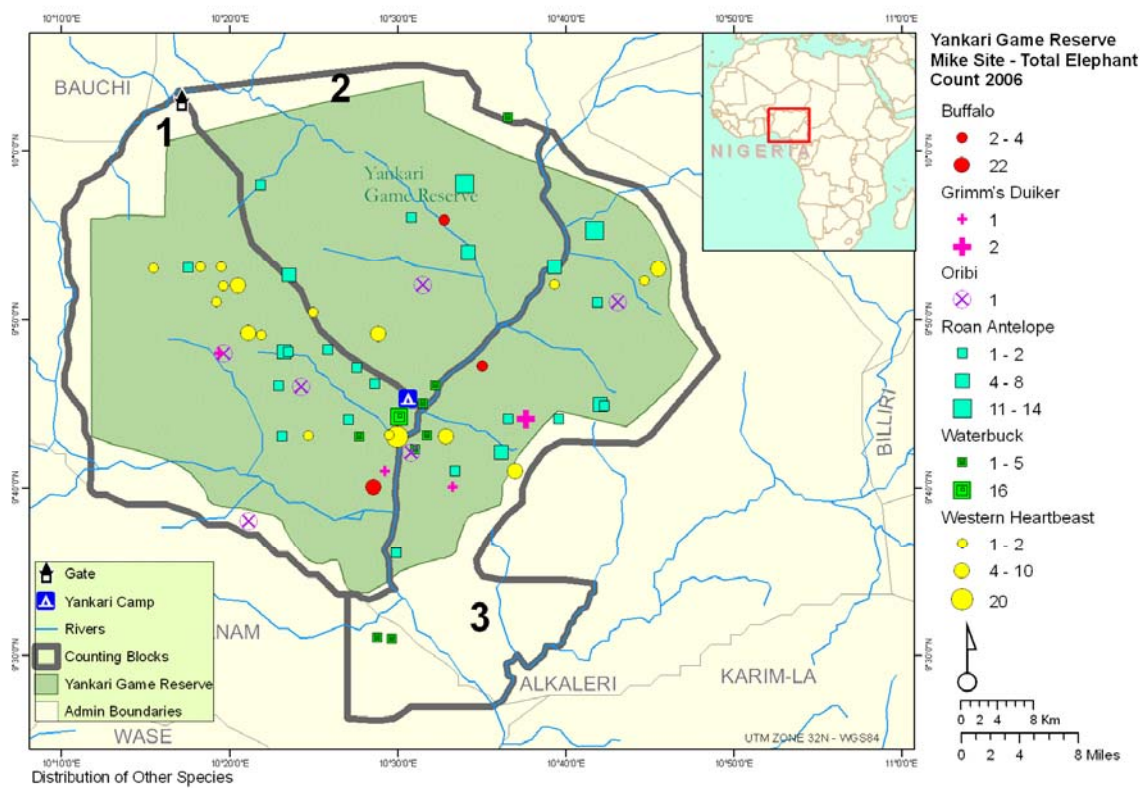


Figure 4

Livestock and Other Human Activities

A total of 8,894 livestock was estimated within the conservation area. Block 3 had the highest number of livestock 65.86% of the total, followed by Block 1 (Table 4, fig 5). The entire conservation area was surrounded by heavy human settlement with high concentrations in block 1 & 3.

Table 4: Livestock and Human Settlements

BLOCKS	Cattle	Shoats(Goats & Sheep)	Total	Farmlands	Settlements	Total
1	1,456	410	1,866	111	54	165
2	1,167	2	1,169	31	13	44
3	5,605	254	5,859	64	52	116
TOTAL	8,228	666	8,894	206	119	325

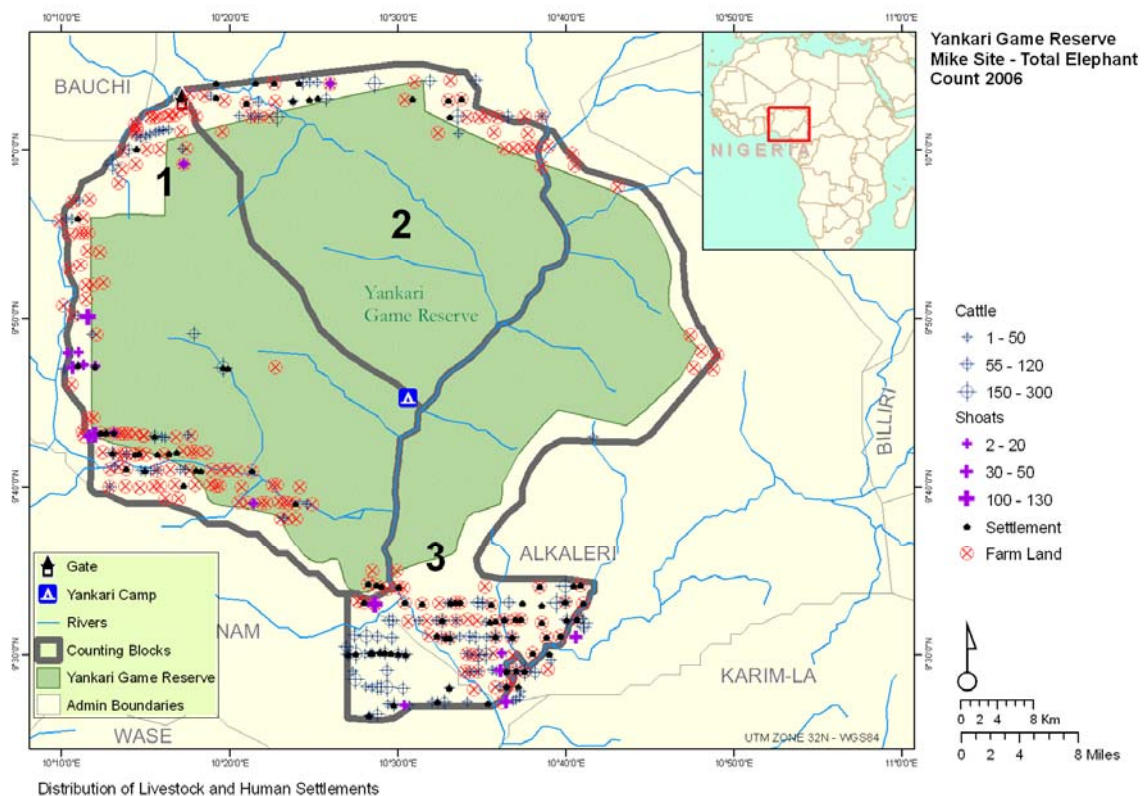


Figure 5

DISCUSSION

This count puts Yankari elephant population at 348 giving a density of 0.11 elephant/km². Although the count was done in the wet season, the visibility was good enough, and the crew could spot even an Oribi Duiker from the air. This figure therefore represents the current population of Yankari elephants. Using Nicholas (1999) estimate of 328 this represent an annual growth of 0.53%, which is quite low and suggests this population is stable. Although the population comprises of mixed group of young, sub-adults and adults a detailed individual identification of the population should be initiated to understand the actual dynamics of the population.

As most elephant populations in Nigeria are small, fragmented and probably unviable this could be the only viable national population that requires specialized management and conservation strategy with a focus on addressing reasons for this slow growth.

From the survey there was evidence of rapid habitat loss from encroachment into the elephant range. The density of 2.54-livestock/ km² along side numerous human settlement and farmlands indicates a rapid habitat loss that need to be addressed immediately by the state. The shrinkage of the elephant habitats must be arrested by securing the boundaries of the current known elephant ranges and by evicting illegal settlers from the range. Human activities such as farming, logging, mining and even hunting that has led to the loss of the habitat and disturbs elephants must be immediately stopped.

From the survey, it is also evident that human activities have made Yankari an "ecological island" (Fig 4) and elephant movement have been curtailed, which seems to rule out any real possibility of wet season dispersal. These elephants move in large aggregation with only temporary separation. The elephants confine themselves to the confluence of the Yashi and Gaji Rivers to the north of Wicky camp, which is a sign of harassment and insecurity in other areas. An immediate attempt should be made to stop all illegal activities within the reserve and buffer areas. The boundaries of the Game Reserve should be clearly demarcated and secured to prevent further encroachment. Nicholas (1999) in thirty total dry season counts also made 43% of his sightings to the north of Wikki camp between Sir Giwaiin Bell Falls and Mawulgo springs, mainly on the West side of the Gaji river. It is therefore important to design the discrete blocking in subsequent aerial counts, taking cognisance of this distribution by creating a block around Wikki Camp and spreading outwards as elephants appear to confine themselves to this area in both wet and dry seasons.

Thirteen elephant carcasses (old/very old) were recorded during the census giving a carcass ratio of 3.73%. Also, from the park records four elephants are known to have been poached for their ivory since January 2006 (Tata pers comm.). Poaching could therefore be one of the factors contributing to the slow growth of the Yankari population. Nicholas (1999) also reported a skewed population towards younger generations and contributed that to upsurge of poaching for ivory that targeted bulls over 40 years old. No individual bull was sighted on its own during this census. Although they could have been part of the large aggregation, their numbers is believed to be significantly low. A

programme to estimate age structures and sex ratios should be initiated to understand this dynamics.

Although MIKE has been operational in this site since 2003, no organised patrolling goes on in Yankari, and very little resources have been set aside by the Federal Government under the National Park Service for elephant patrols and protection or Bauchi State Government. The high MIKE Site Officers turnover have resulted into poor record of illegal killing in the site and with the general lack of security patrols, the future of these elephants is bleak especially if encroachment and other illegal activities continues to flourish in the Park. Furthermore according to ETIS 2002 report, Nigeria has one of the poorest records in the fight against illicit ivory trade, ranking high amongst originating countries and low on the law enforcement scale.

More resources should be set aside for wildlife protection in this ecosystem. Intensive air and ground patrols should be carried out continuously to monitor the elephant status and ensure the survival of Nigeria's possibly only viable elephant population.

RECOMMENDATIONS AND CONCLUSIONS

There is an urgent need to set up a special elephant conservation program for Yankari by the Bauchi state to conform to the strategy for the conservation of West African Elephants. The conservation program should focus on:

- Ensuring adequate park protection and surveillance for the elephants.
- Securing the buffer areas of Yankari Game Reserve by promoting compatible land use practices within the dispersal areas. Such an action should develop strategies that would maximise benefits from elephants to the local communities through eco tourism projects. It is hereby recommended that a team of Park managers and community opinion leaders should visit Kenya and or South Africa, where such venture has led to efficient elephant management.
- Recruit, train, equip and motivate anti-poaching and other illegal activities patrol teams to make them efficient.
- Establish village or community game guards to control poaching and other illegal activities
- Establish intelligence networks to combat poaching and investigate the linkage between domestic ivory trade and illegal killing.
- Undertake intensive research into the bio-diversity of the park, to establish the impact of encroachment.
- Although a dry season count for Yankari was initially proposed, this wet season count has given a reliable estimate of the actual number and distribution pattern of the elephants as these elephants are now very unlikely to disperse beyond the

range covered by this survey.

- In order to minimise the rise of double counts and undercounts, future total counts should use a different block layout ensuring that the core of the population lies at the centre of a block and not at the confluence of 3 blocks as was the case in this study.
- The focus should be to address encroachment, establishing efficient protection systems and stopping illegal killing. A next total count should therefore be undertaken after 3 years to establish the status then.

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We would also like to thank the Rear Seat Observers comprising of Tata Umar; T.D. John and Talatu Tende for their endurance in the air and being good spotters. To the team drivers, Bauchi Airport staff without whom the count would not have been smooth we applaud your dedication. Finally, to all those who participated in anyway and have not been mentioned, we thank you for your contribution to make the Yankari count a success.

Appendix 1: Counting Methods

Total Aerial Count of Elephants: Yankari Game Reserve MIKE Site. Briefing notes compiled by Patrick Omondi

July 2006

Counting Methods

The ecosystem has been divided up into discrete counting blocks, bordered by well-defined features such as roads, rivers, escarpment edges, mountains or the Park/Reserve boundary. Each crew will be allocated one or more blocks to be counted each day and will be provided with flight maps of the blocks.

Elephants, dead elephants, buffalo, roan antelope, western hartebeest, waterbuck, oribi will be counted. **Cattle, goats and sheep (shoats)** herds will be recorded as approximate estimates. The aim is to fly parallel lines across each block, to scan the entire surface and to record the accurate position and number of each group of animals.

An UTM grid has been super-imposed on each block map, so that transects can be flown on this grid with the help of GPS.

The GPS will also record the exact flight pattern for the later reconstruction of the exact position of each observation.

The GPS will be used to fly in parallel strips or 'flight lines', using the GPS to stay on track. In most cases East-West lines should be chosen, which has the advantage of equal light for the observers on both sides.

Pilots Role

The pilot should be familiar with using a GPS to fly a grid pattern before beginning the count.

The pilot and Front Seat Observer (FSO) must pre-plan each flight, decide on whether they will fly East-West or North-South transects. It is a good idea also to decide on the standard strip width separation to be used (this should be discussed with co-ordinators). Adjacent strips should be no further apart than the distance at which the observers can spot the animals in question. Suggested intervals are **1 km** or less for the riverine or dense areas, spreading out to **1.5 to 2 km** in the more open areas, or in the larger blocks.

When herds on the far side of a strip need to be counted or photographed the basic flying pattern may be interrupted temporarily. Normally, the aircraft and crew will circle around a group of elephants.

Great care must be taken, however, to resume the original strip at the spit at which it was broken off (refer to ground features before leaving the strip and use the GPS to reorient yourself when rejoining to check that you are on line).

The type of aircraft used largely determines speed; **130kph/80mph** is the most suitable speed for total aerial counts.

Height should be adapted to prevailing conditions (visibility, vegetation type etc.). A suitable mean height is **200-400 feet**. Flying higher increases the tendency to do wider strips, which should be avoided. Changes in ground level altitude should be observed and taken into account.

The pilot is also responsible for guaranteeing that he or she flies a **2-3km overlap** into the adjacent block on each block boundary. The pilot should participate in the counting only in so far as he can comfortably do so. In many cases, the pilot's vantage point can prove particularly useful in drawing the observer's attention to the animals coming in the plane's flight path.

Sharing responsibilities

The pilot and FSO must also decide on their start point and programme this into the GPS. The start point should be about 2km outside the block on the first flight line, so that the pilot has some time to line up on his correct line. The first transect should be at least 1 km outside the block in order to give a margin of overlap, and when turning at the end of each transect a similar overlap should be left into the next block.

Observers Role

The FSO will be responsible for the actual recording of data. The FSO will, in consultation with the Rear Seat Observers and the pilot, adjust the strip widths as necessary. The flight lines should be recorded onto the FSO's flight map including any deviations. This will be compared later with the computer printout, but is needed in case of any computer failure. The FSO must be certain that the pilot is flying a satisfactory overlap into adjacent blocks. The FSO will have primary responsibility for the recording and mapping of all data as described below.

The RSOs are responsible for observing on his or her side of the plane and for helping out when other observers are estimating large herds. When an animal is spotted they will call out clearly and loudly to the pilot and FSO indicating the species, side of aircraft, and the number of individuals counted (for example: 'Elephant, right, twelve). Very often if there is any doubt as to the exact number the pilot will need to circle the group until a consistent figure is agreed upon.

RSOs must alert the pilot when it will be necessary to photograph a herd that is too large to simply count (all herds over 25). See below for instructions on photography. The RSOs are responsible for calling out herd estimates on all herds that are photographed.

RSOs should make every effort not to call out their data at the same time as their fellow RSO is calling out his/hers. They must commit their information to memory and call it out to the FSO at the earliest possible opportunity or when requested by the FSO.

Recording animal numbers, species and photographic data in the plane:

The animals recorded will be elephants (**E**) both live and dead, buffalo (**B**), roan antelopes (**RA**); Western Hartebeest (**WH**); Waterbuck (**WB**); Hippos (**HI**) and cattle (**C**), sheep and goats (**SH**) distribution. Dead elephants will be recorded in the following categories:

- 5 **Carcass 1 (C1):** for **fresh** carcass (less than 1 month old), still has flesh giving the body a rounded appearance. Vultures probably present and ground still moist from body fluids.
- 6 **Carcass 2 (C2):** for **recent** carcass (more than 1 month old but less than one year old), the rot patch and skin still present. Skeleton not scattered.
- 7 **Carcass 3 (C3):** for an **old** carcass (more than a year old), where only a skeleton is present with white bones visible. Vegetation re-grown in rot patch.

- 8 **Carcass 4 (C4)** for a **very old** carcass (up to ten years old), where the bones are grey and cracked and widely scattered so the carcass does not stand out as a distinct entity. Difficult to spot from the air.

Each FSO will be equipped with a data entry sheet and a flight map. The FSO will be responsible for the entry of all data onto these sheets. During the flight the FSO will record, serially as a GPS way-point (or time reading), each individual group of each species on the data sheet along with the herd count or estimate and any photographs taken.

Recording the way-points (or time readings)

The pilot will record the actual way-point (or time point) on the GPS for later computer downloading. A briefing and demonstration of GPS handling will be made.

Correspondingly, the FSO will plot each group (according to its GPS way-point number (or time reading) on the data sheet) on the flight map. The FSO will not record the number of individuals per group onto the flight map. This will be done on clean maps later.

Group sizes are important for later analysis. Therefore, the FSO will plot each discrete group including single animals (NO LUMPING) in its approximate location. The pilot can assist the FSO to determine the plane's exact location at any given time. Make sure adjacent groups do not get mixed up by encircling more than one group on the flight map. Where groups are concentrated, they may be most clearly recorded on the flight map outside the actual block boundaries with an arrow to show the approximate location. When numerous herds are gathered in close proximity it may be easiest for the pilot to fly high and together with the FSO and RSOs work out a plan for the order of counting the different herds before coming low again to count each herd in the order agreed upon. If a waypoint has more than one observation the FSO must make sure the same waypoint number is written down for each observation.

Photographs

When herds of buffalo or elephant number more than 25 they are to be photographed. The FSO must coordinate closely with the pilot to assure the best possible alignment and order before they begin to count or photograph the herd(s). The FSO will then record the group number onto the flight map and the **group number, species, film number and number of frames taken** and an **estimate of herd size** onto the data sheet.

It is imperative that an estimate be made in the unlikely event that the films are destroyed of the camera is malfunctioning. A blank should be shot into the lens cap or the photographers hand in between different herds of between different series of shots of one herd to allow for accurate herd separation in the final photographic analysis. Make sure that all your films are properly labelled. Films will be numbered in advance. The individual film number will be scratched into the emulsion on the film leader – check to make sure this has been done.

Generally, the best angle for photography is slightly oblique, but not too oblique as larger animals may obscure young ones. Buffalo herds are particularly difficult to photograph properly. When bunched up or lying down, buffalo must be 'buzzed' to get them up and moving before the photograph is taken. Do not take pictures for too high up as it defeats the purpose when the animals are too small to count on the pictures.

Photographs should not be taken at anything under 1/500 sec or they will be blurred. Also make sure your film speed is set at 400 ASA. Make certain your focus is at infinity. It is often a good idea to tape it fast for the duration of the count. You may use a 50 or 55mm lens but a 105 or 135mm lens is preferable.

Finalising Data

Clear and legible recording is not always possible while flying. Therefore, after each day's flying the **FSO should set aside an hour or so for finalizing the day's data collection**. The original data sheets and flight maps must be tidied up so that they are legible by anyone attempting to read them. After cleaning up the original flight data, the FSO must then clean up the map.

The ground crew at the end of the day's flying will download the GPS, and a map of the flight path together with the waypoints will be printed out. The FSO must then check this map, and write down the actual number of each species recorded as well as dead elephants at each waypoint (using species code and number or estimated number of individuals). At this stage any **double counts of herds should be removed** through discussion with the pilot, RSOs and co-ordinators. This cleaned and checked map will be used for preliminary analysis by the co-ordinators.

A display table will be filled in at the end of each day by the ground crew showing the total number of each species counted in each block, together with start and stop flight times.

Key for species codes to be used:

B	Buffalo
BN	Baboon
C	Cattle
CM	Camel
GD	Grims Duiker
E	Elephant
C1	Fresh Carcass
C2	Recent Carcass
C3	Old Carcass
C4	Very old Carcass
LN	Lion
RA	Roan Antelope
SH	Shoats (Goats & Sheep)
WB	Waterbuck
WH	Warthog
WT	Western Hartebeest
OR	Oribi
IL	Illegal Activity
FL	Farmland
ST	Settlement
BB	Bushbuck

Carcass 1 (C1): Fresh (\leq 1 Month) still has flesh giving the body a rounded appearance. Vultures probably present and ground still moist from body fluids.

Carcass 2 (C2): Recent (\leq 1 year). Rot patch and skin present. Skeleton not scattered.

Carcass 3 (C3): Old (\leq 1 year) clean bones, skin usually absent, vegetation re-grown in rot patch.

Carcass 4 (C4): (Up to 10 years) Bones scattered and turning grey.

Appendix 2: Data Sheet

YANKARI GAME RESERVE
MIKE SITE

SHEET NO.

Pilot						Block No.		
Front Seat Observer								
Rear Seat Observer(left)						Date		
Rear Seat Observer(right)								
Take off		Start count			Stop count		Land	
Way Point	Dist.	L/R	Species	Estimate	Film# & Frames	End Frame	Photo-count	Comments (Transects,etc)

Appendix 3: List and Addresses of Participants

MIKE SITE TOTAL AERIAL COUNT OF ELEPHANTS 2006 - YANKARI AND SAMBISA GAME RESERVES LIST OF PARTICIPANTS

Name	Organisation and Title	Address	Email	Telephone Contact
1 Patrick Omondi	Head of Species Conservation Kenya Wildlife Service	P.O. Box 40241, 00100 Nairobi, Kenya	pomondi@kws.org	Office: 254-20-600800 Mobile: 254-722-791718
2 Rasak K. Adekola	Federal Ministry of Environmen Abuja	PMB 468 Garki, Abuja	koladekola@yahoo.com	234-803-3704528
3 Aniema Medekong	Pilot Private Flyers International	11C Ohikere Road, Kaduna	imagineflyin@yahoo.com	234-806-8090369
4 Capt. Jim Hassan	Pilot Private Flyers International	11C Ohikere Road, Kaduna	jimassan@yahoo.com	234-803-6161971
5 Pam Rwangi	Engineer Private Flyers International	11C Ohikere Road, Kaduna	pam_jrv@yahoo.com	234-802-3111426
6 Isiaka Adewale	Engineer Private Flyers International	11C Ohikere Road, Kaduna	jimassan@yahoo.com	234-803-3174258
7 Abdulazeez Kolawale	Driver Private Flyers International	11C Ohikere Road, Kaduna	jimassan@yahoo.com	234-806-0576653
8 Usman Moh'd Maaji	Head of Wildlife Ministry of Environment Borno State	Forestry and Wildlife Services Division PMB 1300, Maiduguri		
9 Solomon Jidayi Mamza	Deputy Head of Wildlife, Borno Ministry of Environment	Ministry of Environment Forestry and Wildlife Services Division PMB 1300, Maiduguri		234-805-5548595 234-802-2193558
10 John H. Mshelbwala	Mike National Officer Federal Ministry of Environmen Abuja	Federal Ministry of Environm Department of Forestry PMB 468, Abuja	johnmshelbwala2@yahoo.co	234-803-3287039
11 Tata Umar	Yankari Project	Yankari Game Reserve Bauchi		
12 T.D. John	Federal Ministry of Environmen	Federal Ministry of Environm PMB 468, Abuja	timdanjohn@yahoo.com	234-805-2734050
13 Talatu Tende	Yankari Project	Yankari Game Reserve Bauchi	talatutende@yahoo.com	234-803-3175060
14 Mahaman Sani Massalatchi	Sub-Regional Support Officer CITES MIKE Programme West Africa	01 BP 1618 Ouagadougou 0 Ouagadougou, Burkina Faso	massalatchisani@citesmike	Office: 226-50 33 16 19 Mobile: 226-76 60 06 12 Fax: 226-50 33 16 21
15 Rose M. Mayienda	GIS Database Manager African Wildlife Foundation	P.O. Box 48177, 00100 Nairobi, Kenya	mayienda@awfke.org mayienda@yahoo.com	Office: 254-20-710367 Mobile-254-722-151663

Appendix 4: Yankari Game Reserve – Total Elephant Count July 2006

YANKARI NATIONAL PARK MIKE SITE - TOTAL ELEPHANT COUNT JULY 2006

Pilot:	Jim Hassan	Aircraft:	5N APE	Take Off Time:	7:45 AM
Front Seat Observer	Patrick Omondi	Date:	3rd July 2006	Start Count:	8:02 AM
Rear Seat Observer (Left)	John Mshebwala	Block:	1	Stop Count:	11:25
Rear Seat Observer (Right)	T.D. John			Landing Time:	11:26 AM

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLOC	COMMENTS	
001	03-JUL-06 08:07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	start point	
002	03-JUL-06 08:08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
003	03-JUL-06 08:08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
004	03-JUL-06 08:09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
005	03-JUL-06 08:09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
006	03-JUL-06 08:09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
007	03-JUL-06 08:09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
008	03-JUL-06 08:09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
009	03-JUL-06 08:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
010	03-JUL-06 08:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
011	03-JUL-06 08:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
012	03-JUL-06 08:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
013	03-JUL-06 08:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
014	03-JUL-06 08:11	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
015	03-JUL-06 08:12	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
016	03-JUL-06 08:12	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
017	03-JUL-06 08:12	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
018	03-JUL-06 08:12	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
019	03-JUL-06 08:12	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
020	03-JUL-06 08:12	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
021	03-JUL-06 08:13	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
022	03-JUL-06 08:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
023	03-JUL-06 08:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
024	03-JUL-06 08:18	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
025	03-JUL-06 08:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
026	03-JUL-06 08:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
027	03-JUL-06 08:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
028	03-JUL-06 08:21	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
029	03-JUL-06 08:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
030	03-JUL-06 08:22	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
031	03-JUL-06 08:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
032	03-JUL-06 08:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
033	03-JUL-06 08:26	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	1	0	0	0	0	0	0	1	
034	03-JUL-06 08:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
035	03-JUL-06 08:36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
036	03-JUL-06 08:37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Town
037	03-JUL-06 08:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
038	03-JUL-06 08:38	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
039	03-JUL-06 08:39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLOC	COMMENTS
040	03-JUL-06 08:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
041	03-JUL-06 08:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
042	03-JUL-06 08:55	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
043	03-JUL-06 08:56	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
044	03-JUL-06 08:56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
045	03-JUL-06 08:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
046	03-JUL-06 08:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
047	03-JUL-06 08:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
048	03-JUL-06 08:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
049	03-JUL-06 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
050	03-JUL-06 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
051	03-JUL-06 09:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
052	03-JUL-06 09:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
053	03-JUL-06 09:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
054	03-JUL-06 09:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
055	03-JUL-06 09:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
056	03-JUL-06 09:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1
057	03-JUL-06 09:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	1
058	03-JUL-06 09:32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
059	03-JUL-06 09:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
060	03-JUL-06 09:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
061	03-JUL-06 09:39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
062	03-JUL-06 09:41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
063	03-JUL-06 09:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
064	03-JUL-06 09:47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
065	03-JUL-06 09:52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
066	03-JUL-06 10:04	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	130	0	0	0	0	0	0	0	0	0	0	0	0	1
067	03-JUL-06 10:04	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
068	03-JUL-06 10:04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
069	03-JUL-06 10:07	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
070	03-JUL-06 10:07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
071	03-JUL-06 10:11	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
072	03-JUL-06 10:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1
073	03-JUL-06 10:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
074	03-JUL-06 10:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1
075	03-JUL-06 10:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1
076	03-JUL-06 10:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
077	03-JUL-06 10:25	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
078	03-JUL-06 10:32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	1
079	03-JUL-06 10:32	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
080	03-JUL-06 10:32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	1
081	03-JUL-06 10:33	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
082	03-JUL-06 10:33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	1
083	03-JUL-06 10:34	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	1
084	03-JUL-06 10:34	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	1
085	03-JUL-06 10:34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0	0	1

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLOC	COMMENTS	
086	03-JUL-06 10:40	0	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
087	03-JUL-06 10:41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	poachers
088	03-JUL-06 10:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
089	03-JUL-06 10:46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
090	03-JUL-06 10:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	
091	03-JUL-06 10:53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
092	03-JUL-06 10:54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
093	03-JUL-06 11:01	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
094	03-JUL-06 11:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	

YANKARI NATIONAL PARK MIKE SITE - TOTAL ELEPHANT COUNT JULY 2006

Pilot:	Jim Hassan	Aircraft:	5N APE	Take Off Time:	4:23 PM
Front Seat Observer	Patrick Omondi	Date:	3rd July 2006	Start Count:	4:45 PM
Rear Seat Observer (Left)	Tata Umar	Block:	1	Stop Count:	6:18 PM
Rear Seat Observer (Right)	T.D. John			Landing Time:	6:45 PM

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLOC	COMMENTS	
095	03-JUL-06 16:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Start Count	
096	03-JUL-06 16:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	1	
097	03-JUL-06 17:01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1		
098	03-JUL-06 17:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
099	03-JUL-06 17:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
100	03-JUL-06 17:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
101	03-JUL-06 17:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
102	03-JUL-06 17:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	1		
103	03-JUL-06 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	1		
104	03-JUL-06 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1		
105	03-JUL-06 17:15	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1		
106	03-JUL-06 17:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	0	1	0	0	0	0	0	1		
107	03-JUL-06 17:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
108	03-JUL-06 17:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
109	03-JUL-06 17:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
110	03-JUL-06 17:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
111	03-JUL-06 17:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
112	03-JUL-06 17:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
113	03-JUL-06 17:18	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1		
114	03-JUL-06 17:18	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
115	03-JUL-06 17:18	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
116	03-JUL-06 17:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	town	
117	03-JUL-06 17:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
118	03-JUL-06 17:19	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
119	03-JUL-06 17:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
120	03-JUL-06 17:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1		
121	03-JUL-06 17:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1		
122	03-JUL-06 17:26	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
123	03-JUL-06 17:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
124	03-JUL-06 17:29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1		
125	03-JUL-06 17:29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	1		
126	03-JUL-06 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3		
127	03-JUL-06 17:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3		

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLOC	COMMENTS
128	03-JUL-06 17:33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1	
129	03-JUL-06 17:41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
130	03-JUL-06 17:41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
131	03-JUL-06 17:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
132	03-JUL-06 17:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
133	03-JUL-06 17:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
134	03-JUL-06 17:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
135	03-JUL-06 17:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	school
136	03-JUL-06 17:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
137	03-JUL-06 17:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Clinic
138	03-JUL-06 17:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
139	03-JUL-06 17:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
140	03-JUL-06 17:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
141	03-JUL-06 17:45	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
142	03-JUL-06 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
143	03-JUL-06 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
144	03-JUL-06 17:45	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
145	03-JUL-06 17:46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
146	03-JUL-06 17:46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	town
147	03-JUL-06 17:49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
148	03-JUL-06 17:49	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
149	03-JUL-06 17:49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
150	03-JUL-06 17:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
151	03-JUL-06 17:50	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
152	03-JUL-06 17:50	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
153	03-JUL-06 17:51	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
154	03-JUL-06 17:51	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
155	03-JUL-06 17:51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
156	03-JUL-06 17:52	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
157	03-JUL-06 17:52	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
158	03-JUL-06 17:52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
159	03-JUL-06 17:52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
160	03-JUL-06 17:53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
161	03-JUL-06 17:53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
162	03-JUL-06 17:54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
163	03-JUL-06 17:54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
164	03-JUL-06 17:54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
165	03-JUL-06 17:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
166	03-JUL-06 18:01	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
167	03-JUL-06 18:04	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
168	03-JUL-06 18:07	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLOC	COMMENTS	
169	03-JUL-06 18:08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
170	03-JUL-06 18:08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
171	03-JUL-06 18:08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
172	03-JUL-06 18:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
173	03-JUL-06 18:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
174	03-JUL-06 18:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
175	03-JUL-06 18:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
176	03-JUL-06 18:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
177	03-JUL-06 18:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
178	03-JUL-06 18:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	1	
179	03-JUL-06 18:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
180	03-JUL-06 18:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
181	03-JUL-06 18:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
182	03-JUL-06 18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
183	03-JUL-06 18:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
184	03-JUL-06 18:17	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	

YANKARI NATIONAL PARK MIKE SITE - TOTAL ELEPHANT COUNT JULY 2006

Pilot:	Jim Hassan	Aircraft:	5N APE	Take Off Time:	7:45 AM
Front Seat Observer	Patrick Omondi	Date:	4th July 2006	Start Count:	8:20 AM
Rear Seat Observer (Left)	Tata Umar	Block:	1 and 3	Stop Count:	10:40 AM
Rear Seat Observer (Right)	T.D. John			Landing Time:	11:38 AM

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLOC	COMMENTS
001	04-JUL-06 08:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
002	04-JUL-06 08:22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
003	04-JUL-06 08:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
004	04-JUL-06 08:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
005	04-JUL-06 08:25	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	1	
006	04-JUL-06 08:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
007	04-JUL-06 08:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
008	04-JUL-06 08:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
009	04-JUL-06 08:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
010	04-JUL-06 08:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
011	04-JUL-06 08:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
012	04-JUL-06 08:27	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
013	04-JUL-06 08:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
014	04-JUL-06 08:37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
015	04-JUL-06 08:37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
016	04-JUL-06 08:37	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
017	04-JUL-06 08:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
018	04-JUL-06 08:39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
019	04-JUL-06 08:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
020	04-JUL-06 09:01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3	
021	04-JUL-06 09:02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
022	04-JUL-06 09:02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
023	04-JUL-06 09:03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
024	04-JUL-06 09:03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
025	04-JUL-06 09:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	stop
026	04-JUL-06 09:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	start
027	04-JUL-06 09:14	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
028	04-JUL-06 09:15	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	
029	04-JUL-06 09:19	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
030	04-JUL-06 09:19	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	
031	04-JUL-06 09:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	3	
032	04-JUL-06 09:20	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
033	04-JUL-06 09:20	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
034	04-JUL-06 09:21	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS		
035	04-JUL-06 09:21	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
036	04-JUL-06 09:22	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
037	04-JUL-06 09:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	
038	04-JUL-06 09:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	
039	04-JUL-06 09:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
040	04-JUL-06 09:24	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
041	04-JUL-06 09:24	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
042	04-JUL-06 09:24	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
043	04-JUL-06 09:24	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
044	04-JUL-06 09:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	
045	04-JUL-06 09:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
046	04-JUL-06 09:25	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	3	
047	04-JUL-06 09:26	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
048	04-JUL-06 09:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
049	04-JUL-06 09:27	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
050	04-JUL-06 09:28	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	
051	04-JUL-06 09:31	0	0	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
052	04-JUL-06 09:31	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
053	04-JUL-06 09:32	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
054	04-JUL-06 09:32	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
055	04-JUL-06 09:32	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
056	04-JUL-06 09:32	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
057	04-JUL-06 09:33	0	0	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
058	04-JUL-06 09:33	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
059	04-JUL-06 09:35	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
060	04-JUL-06 09:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
061	04-JUL-06 09:39	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
062	04-JUL-06 09:39	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
063	04-JUL-06 09:40	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
064	04-JUL-06 09:40	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
065	04-JUL-06 09:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
066	04-JUL-06 09:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	
067	04-JUL-06 09:41	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	3	
068	04-JUL-06 09:41	0	0	185	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	3	
069	04-JUL-06 09:42	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
070	04-JUL-06 09:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
071	04-JUL-06 09:43	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
072	04-JUL-06 09:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	
073	04-JUL-06 09:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	3	
074	04-JUL-06 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
075	04-JUL-06 09:46	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	3	

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS				
076	04-JUL-06 09:46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3				
077	04-JUL-06 09:46	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
078	04-JUL-06 09:47	0	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3			
079	04-JUL-06 09:47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3			
080	04-JUL-06 09:47	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3			
081	04-JUL-06 09:50	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3			
082	04-JUL-06 09:51	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3			
083	04-JUL-06 09:51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3			
084	04-JUL-06 09:51	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3			
085	04-JUL-06 09:51	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
086	04-JUL-06 09:52	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
087	04-JUL-06 09:52	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
088	04-JUL-06 09:52	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
089	04-JUL-06 09:53	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
090	04-JUL-06 09:53	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
091	04-JUL-06 09:53	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
092	04-JUL-06 09:54	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
093	04-JUL-06 09:55	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
094	04-JUL-06 09:55	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3			
095	04-JUL-06 09:56	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3			
096	04-JUL-06 09:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3		
097	04-JUL-06 09:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
098	04-JUL-06 09:58	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3		
099	04-JUL-06 09:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
100	04-JUL-06 09:58	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3		
101	04-JUL-06 09:59	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
102	04-JUL-06 09:59	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
103	04-JUL-06 10:00	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
104	04-JUL-06 10:00	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
105	04-JUL-06 10:00	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3		
106	04-JUL-06 10:01	0	0	105	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3		
107	04-JUL-06 10:03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3		
108	04-JUL-06 10:03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3		
109	04-JUL-06 10:04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
110	04-JUL-06 10:05	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
111	04-JUL-06 10:05	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
112	04-JUL-06 10:05	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
113	04-JUL-06 10:05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
114	04-JUL-06 10:06	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
115	04-JUL-06 10:07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
116	04-JUL-06 10:08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS	
117	04-JUL-06 10:08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
118	04-JUL-06 10:09	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
119	04-JUL-06 10:09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
120	04-JUL-06 10:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	
121	04-JUL-06 10:10	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
122	04-JUL-06 10:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
123	04-JUL-06 10:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
124	04-JUL-06 10:11	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
125	04-JUL-06 10:12	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
126	04-JUL-06 10:12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
127	04-JUL-06 10:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	burnt area
128	04-JUL-06 10:13	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
129	04-JUL-06 10:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
130	04-JUL-06 10:14	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
131	04-JUL-06 10:15	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
132	04-JUL-06 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
133	04-JUL-06 10:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
134	04-JUL-06 10:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
135	04-JUL-06 10:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	1	0	0	0	0	0	3	
136	04-JUL-06 10:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
137	04-JUL-06 10:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
138	04-JUL-06 10:22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
139	04-JUL-06 10:22	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
140	04-JUL-06 10:22	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	
141	04-JUL-06 10:22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
142	04-JUL-06 10:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
143	04-JUL-06 10:23	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
144	04-JUL-06 10:24	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
145	04-JUL-06 10:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
146	04-JUL-06 10:25	0	0	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
147	04-JUL-06 10:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	big settlement
148	04-JUL-06 10:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	
149	04-JUL-06 10:27	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
150	04-JUL-06 10:27	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
151	04-JUL-06 10:28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	3	
152	04-JUL-06 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
153	04-JUL-06 10:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	
154	04-JUL-06 10:31	0	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
155	04-JUL-06 10:32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
156	04-JUL-06 10:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
157	04-JUL-06 10:39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	

YANKARI NATIONAL PARK MIKE SITE - TOTAL ELEPHANT COUNT JULY 2006

Pilot:	Jim Hassan	Aircraft:	5N APE	Take Off Time:	4:04 PM
Front Seat Observer	Patrick Omondi	Date:	4th July 2006	Start Count:	4:42 PM
Rear Seat Observer (Left)	Tata Umar	Block:	3	Stop Count:	6:00 PM
Rear Seat Observer (Right)	Talatu Tende			Landing Time:	6:23 PM

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS	
001	04-JUL-06 16:06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
002	04-JUL-06 16:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Start Count
003	04-JUL-06 16:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	
004	04-JUL-06 16:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	
005	04-JUL-06 16:56	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
006	04-JUL-06 17:04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	
007	04-JUL-06 17:12	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
008	04-JUL-06 17:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	
009	04-JUL-06 17:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	3	
010	04-JUL-06 17:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	3	
011	04-JUL-06 17:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	3	
012	04-JUL-06 17:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
013	04-JUL-06 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	
014	04-JUL-06 17:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	3	
015	04-JUL-06 17:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	
016	04-JUL-06 17:38	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
017	04-JUL-06 17:46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	
018	04-JUL-06 17:47	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
019	04-JUL-06 17:48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	
020	04-JUL-06 17:54	0	0	0	0	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
021	04-JUL-06 17:54	0	0	0	0	0	0	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
022	04-JUL-06 17:56	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
023	04-JUL-06 17:56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	
024	04-JUL-06 17:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	

YANKARI NATIONAL PARK MIKE SITE - TOTAL ELEPHANT COUNT JULY 2006

Pilot:	Jim Hassan	Aircraft:	5N APE	Take Off Time:	4:23 PM
Front Seat Observer	Patrick Omondi	Date:	6th July 2006	Start Count:	4:58 PM
Rear Seat Observer (Left)	Tata Umar	Block:	3	Stop Count:	6:17 PM
Rear Seat Observer (Right)	T.D. John			Landing Time:	6:47 PM

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS	
001	06-JUL-06 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
002	06-JUL-06 16:06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3		
003	06-JUL-06 16:07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3		
004	06-JUL-06 16:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Double count 250 elephants. Same counted on 4/7/06.	
005	06-JUL-06 16:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Double count 5 elephants. Part of group counted on 4/7/06.	
006	06-JUL-06 16:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Double count 18 elephants. Part of group counted on 4/7/06.	
007	06-JUL-06 16:32	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
008	06-JUL-06 16:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3		
009	06-JUL-06 16:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3		
010	06-JUL-06 16:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3		
011	06-JUL-06 16:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3		
012	06-JUL-06 16:55	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
013	06-JUL-06 16:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	River confluence	
014	06-JUL-06 16:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	Poachers camp. 4 poachers seen roasting meat	
015	06-JUL-06 17:06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3		
016	06-JUL-06 17:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Stop count	
MAP	06-JUL-06 14:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
MOB	06-JUL-06 15:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

YANKARI NATIONAL PARK MIKE SITE - TOTAL ELEPHANT COUNT JULY 2006

Pilot:	Jim Hassan	Aircraft:	5N APE	Take Off Time:	12:48 PM
Front Seat Observer	Patrick Omondi	Date:	7th July 2006	Start Count:	1:23 PM
Rear Seat Observer (Left)	Talatu Tende	Block:	3 and 2	Stop Count:	2:24 PM
Rear Seat Observer (Right)	T.D. John			Landing Time:	4:21 PM

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS	
001	07-JUL-06 13:22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Start count
002	07-JUL-06 13:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	
003	07-JUL-06 13:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	
004	07-JUL-06 13:28	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
005	07-JUL-06 13:33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	3	
006	07-JUL-06 13:34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	
007	07-JUL-06 13:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	
008	07-JUL-06 13:39	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
009	07-JUL-06 13:42	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
010	07-JUL-06 13:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	3		
011	07-JUL-06 14:03	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
012	07-JUL-06 14:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	2	
013	07-JUL-06 14:29	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
014	07-JUL-06 14:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
015	07-JUL-06 14:38	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
016	07-JUL-06 14:47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	
017	07-JUL-06 14:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Double count 75 elephants. Part of group counted on 4/7/06.
018	07-JUL-06 15:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
019	07-JUL-06 15:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	
020	07-JUL-06 15:28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	2	
021	07-JUL-06 15:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	3		
022	07-JUL-06 15:46	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	2		
023	07-JUL-06 15:56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Stop count

YANKARI NATIONAL PARK MIKE SITE - TOTAL ELEPHANT COUNT JULY 2006

Pilot:	Jim Hassan	Aircraft:	5N APE	Take Off Time:	9:14 AM
Front Seat Observer	Patrick Omondi	Date:	8th July 2006	Start Count:	9:37 AM
Rear Seat Observer (Left)	Tata Umar	Block:	2	Stop Count:	12:14 PM
Rear Seat Observer (Right)	Talatu Tende			Landing Time:	12:34 PM

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS	
001	08-JUL-06 09:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	2		
002	08-JUL-06 09:56	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
003	08-JUL-06 09:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2		
004	08-JUL-06 10:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	Cleared farm	
005	08-JUL-06 10:32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	2		
006	08-JUL-06 10:34	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
007	08-JUL-06 10:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2		
008	08-JUL-06 10:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	cleared farm	
009	08-JUL-06 10:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3		
010	08-JUL-06 10:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3		
011	08-JUL-06 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3		
012	08-JUL-06 11:01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
013	08-JUL-06 11:01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
014	08-JUL-06 11:01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
015	08-JUL-06 11:02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
016	08-JUL-06 11:02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	farms next to park line	
017	08-JUL-06 11:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
018	08-JUL-06 11:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
019	08-JUL-06 11:26	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
020	08-JUL-06 11:26	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
021	08-JUL-06 11:28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
022	08-JUL-06 11:29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
023	08-JUL-06 11:32	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	well irrigated	
024	08-JUL-06 11:33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
025	08-JUL-06 11:34	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2		
026	08-JUL-06 11:34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
027	08-JUL-06 11:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
028	08-JUL-06 11:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
029	08-JUL-06 11:36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
030	08-JUL-06 11:36	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
031	08-JUL-06 11:36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2		
032	08-JUL-06 11:44	0	0	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
033	08-JUL-06 11:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
034	08-JUL-06 11:45	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		
035	08-JUL-06 11:45	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2		

WPT	DATE	BF	BN	CT	CM	GD	DN	EL	ED	C1	C2	C3	C4	HP	HY	LN	SH	ST	WH	WT	IL	BB	FL	OB	HS	RG	RA	WB	BLO	COMMENTS		
036	08-JUL-06 11:46	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
037	08-JUL-06 11:47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
038	08-JUL-06 11:49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
039	08-JUL-06 11:49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
040	08-JUL-06 11:49	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
041	08-JUL-06 11:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	
042	08-JUL-06 11:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
043	08-JUL-06 11:51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	
044	08-JUL-06 11:51	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
045	08-JUL-06 11:52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	Extensive
046	08-JUL-06 11:53	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
047	08-JUL-06 11:53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
048	08-JUL-06 11:54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
049	08-JUL-06 11:54	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
050	08-JUL-06 11:55	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
051	08-JUL-06 11:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
052	08-JUL-06 11:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
053	08-JUL-06 11:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	
054	08-JUL-06 11:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	
055	08-JUL-06 12:01	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
056	08-JUL-06 12:02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	Intensive
057	08-JUL-06 12:03	0	0	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
058	08-JUL-06 12:04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	Intensive
059	08-JUL-06 12:05	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
060	08-JUL-06 12:07	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	2	
061	08-JUL-06 12:08	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
062	08-JUL-06 12:08	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
063	08-JUL-06 12:09	0	0	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
064	08-JUL-06 12:09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
065	08-JUL-06 12:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	
066	08-JUL-06 12:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
067	08-JUL-06 12:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	
MOB	08-JUL-06 09:39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	