



Improving Protection for Nigeria's Largest Elephant Population in
Yankari Game Reserve

FINAL REPORT
TO THE
INTERNATIONAL ELEPHANT FOUNDATION
FROM THE
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Goal: *To improve the long-term conservation of elephants in Yankari Game Reserve by improving the capacity of the Bauchi State Government to reduce elephant poaching, and take appropriate management actions to protect the reserve and its wildlife.*

Objectives:

1. Reduce levels of poaching in Yankari Game Reserve by increasing the frequency, duration, coverage, and efficacy of anti-poaching patrols.
2. Establish a ranger-based CyberTracker monitoring system to enable the Bauchi State Government to make sound management decisions for the reserve.
3. Survey levels of elephant-human conflict in the Gaji River Valley area.

INTRODUCTION

Yankari Game Reserve contains the largest surviving elephant population in Nigeria, and one of the largest remaining in West Africa. Estimated at about 350 individuals, this population is perhaps the only viable population remaining in Nigeria. Yankari also supports important populations of lion, buffalo, hippo, roan, and hartebeest. Managed as a national park from 1991 to 2006, Yankari is currently operated by the Bauchi State Government as a game reserve. Since 2006, management of the reserve outside the main tourist camp has been neglected and under-funded. As a result, levels of poaching increased substantially and there was a resurgence of the illegal ivory trade.

In 2010, the International Elephant Foundation awarded a grant of \$5,000 to the Wildlife Conservation Society (WCS) to improve levels of protection at Yankari and reduce rates of elephant poaching. A second grant of \$10,560 was awarded in 2011. Additional funds for the project are also provided by the African Elephant Conservation Fund of the U.S. Fish and Wildlife Service, and North Carolina Zoo.

With technical support from Dr. Rich Bergl of the North Carolina Zoo, a CyberTracker-based monitoring system was established in July 2009. Together with the provision of equipment and payment of camping allowances for rangers on overnight patrol, this system has increased both the frequency and coverage of anti-poaching patrols, and a number of arrests have been made as a result. The CyberTracker system has allowed close monitoring of the frequency, duration, and extent of ranger patrols. As a result, it has been possible to clearly see when and where patrols are conducted. The CyberTracker system has documented an improvement in patrolling, but it has also highlighted a number of key areas within the reserve that have been neglected by rangers. More work is also needed to engage with the rangers based at a number of ranger posts on the edge of the reserve.

PROGRESS

Objective 1: Reduce levels of poaching in Yankari Game Reserve by increasing the frequency, duration, coverage, and efficacy of anti-poaching patrols.

Activity 1.1 Provide field equipment to 40 rangers.

The lack of appropriate field equipment has severely limited both the range and duration of ranger patrols in the past. To improve this situation, ten four-man tents were provided to the General Manager of Yankari Game Reserve (YGR). These tents are kept at the central store at Wikki Camp and signed out for by each individual patrol. The tents allow rangers to camp overnight inside the reserve while on patrol rather than being based at inaccessible ranger posts on the edge of the reserve. This has meant that a far higher proportion of YGR has been patrolled than in recent years. With the exception of a small number of inaccessible areas, most of the reserve is now receiving some degree of patrol coverage (see Figure 1 on page 5).



A group of rangers on overnight patrol with one of the tents purchased by WCS. ©WCS-Nigeria.

Activity 1.2 Payment of field allowances.

Prior to the start of the current project, YGR had often been unable to provide rangers with field rations for overnight patrols or with any kind of field allowances. As a result, there were few if any overnight patrols. We now provide each ranger on overnight patrol with a camping allowance of 500 Naira (\$3) per night. This allowance has significantly improved levels of morale and motivation for rangers – many of whom receive only minimal salaries.

In addition to the camping allowance, each ranger on overnight patrol also receives basic food rations, including rice, garri, maize flour, beans, oil, sugar, milk powder, dried fish, and sardines. Rations are purchased centrally and distributed at the start of each patrol.

The bulk of the camping allowances and food rations have been supplied by WCS since July 2009. The General Manager of YGR depends on revenue generated from tourism to be able to fund the recurrent management costs of the reserve, including allowances, rations, and fuel. Unfortunately recent insecurity in the area has resulted in a downturn in tourism and thus reduced revenues. Without support from the current project, and the funds provided by IEF and others, it is unlikely that there would have been any overnight patrols organized.

Activity 1.3 Increase the number and coverage of patrols.

A total of 665 patrol days were completed from January 2010 to December 2011, covering a total patrol distance of 17,487 km over 3,096 hours (Table 1 below). In the same period a total of 108 arrests were made (Appendix 1).

The current patrol strategy focuses on a combination of frequent overnight foot patrols and daily foot/vehicle patrols. Overnight foot patrols by six-man teams of rangers are organized from the central Wikki Camp, and last for three to five days. Between eight and twelve such patrols are routinely organized each month. A central squad of rangers also operates from Wikki Camp and is sent out on a daily basis with vehicle support. The remaining rangers, based at 16 patrol posts on the periphery of the game reserve, were engaged in daily patrols within their respective beats during the project period. Although overnight patrols have increased since July 2009, deployment of rangers on overnight patrols has relied heavily on the use of the reserve's game-viewing vehicles when they were not being used by tourists. The shortage of reliable patrol vehicles is a major constraint for expanded patrolling, and has also meant that there has been little, if any, regular supervision of rangers in the outlying patrol posts

Table 1: Patrol Effort from January 2010 to December 2010.

Date	Patrol Days	Distance covered (kilometers)	Time taken (hours)
January 2010	52	1,038	241
February 2010	63	1,218	264
March 2010	58	1,227	279
April 2010	49	1,242	182
May 2010	60	2,087	316
June 2010	53	1,530	247
July 2010	63	2,416	331
August 2010	47	1,696	232
September 2010	54	1,560	284
October 2010	55	1,004	218
November 2010	52	1,415	217
December 2010	59	1,414	285
Total	665	17,487	3,096

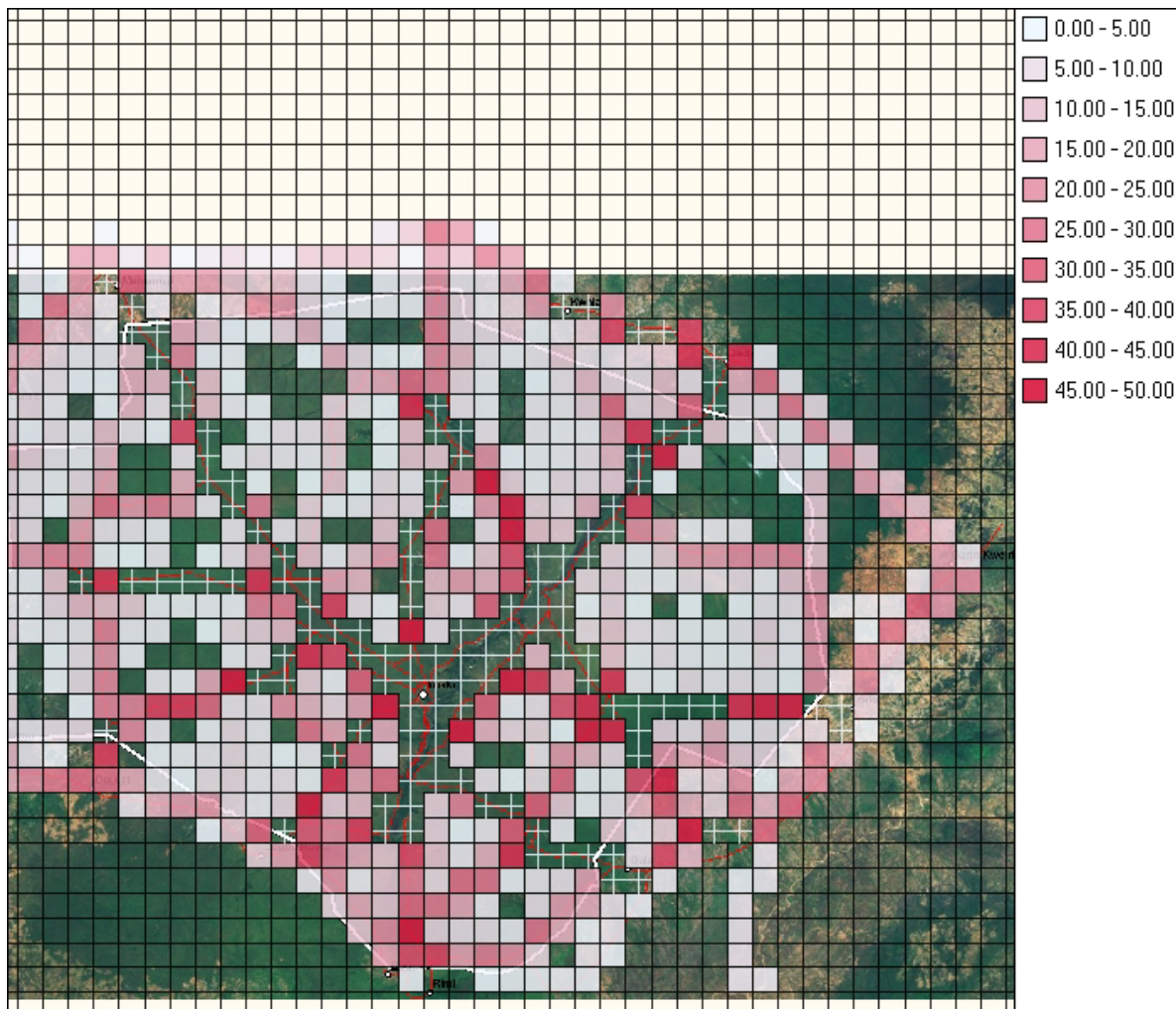


Figure 1: Patrol effort in kilometres, January 2010 – January 2011.

Maps produced using the CyberTracker monitoring system (Figure 1) illustrate that although most of the reserve did receive at least some protection during the reporting period, patrols still tend to be focused along existing tracks and roads. Certain areas of the reserve further away from roads (in green) have been neglected, receiving few if any patrols. We now ensure that the General Manager of YGR is provided with a written report from each patrol which provides him with a map of the area patrolled, patrol statistics (e.g., patrol time, start and stop time, distance covered each day), and maps of wildlife and human evidence. The manager is now using these CyberTracker-generated reports to plan subsequent patrols and monitor the movements and activities of his rangers more effectively. CyberTracker permits the rapid production of these reports, normally within 24 hours of a patrol returning to base. Such reports are then discussed with the patrol leader to identify any discrepancy between the original patrol instructions and the actual patrol as implemented in the field. Maps produced using CyberTracker have also been used to highlight hotspots of human activity within the reserve, and for more effective planning of subsequent patrols.

Objective 2: Establish a ranger-based CyberTracker monitoring system to enable the Bauchi State Government to make sound management decisions for Yankari Game Reserve.

Activity 2.1 Train 12 senior rangers in data collection and analysis, including the use of CyberTracker and patrol reports.

A customized data collection and monitoring system for ranger patrols in YGR (based on the CyberTracker software package) was developed by Dr. Richard Bergl of the North Carolina Zoo. This system allows for consistent and rapid collection of geo-referenced data by rangers, along with automated tracking of patrols and easy analysis of patrol data by YGR management.

Two training workshops were held in July 2009, where 40-50 senior rangers received training in CyberTracker use and standard data collection methods. Each workshop lasted for two days and was led by Dr. Bergl. The workshops were also attended by representatives of the Nigeria National Park Service, the AP Leventis Ornithological Research Institute (University of Jos) and the Nigerian Conservation Foundation. Additional training in downloading data, data analysis, and production of reports was provided to a smaller group of three senior staff, as well as to WCS project officer Gilbert Nyanganji. Quarterly monitoring visits to Yankari by Dr. Bergl and Andrew Dunn during the reporting period also provided additional follow-up training and modifications to the system, based on feedback from YGR staff.



YGR Project Manager, Gilbert Nyanganji, using a CyberTracker in the field. ©WCS-Nigeria.

Activity 2.2 Purchase three CyberTracker units to facilitate the ranger-based monitoring system.

Three ruggedized Recon CyberTracker units were purchased in 2009 and two in 2010. All five units are based at Yankari headquarters at Wikki Camp in the centre of the reserve,

where they can be downloaded at the end of each patrol and recharged. A desktop computer was also purchased for downloading data.



Rangers from Yankari's Central Squad on daily-patrol with driver and CyberTracker. ©WCS-Nigeria

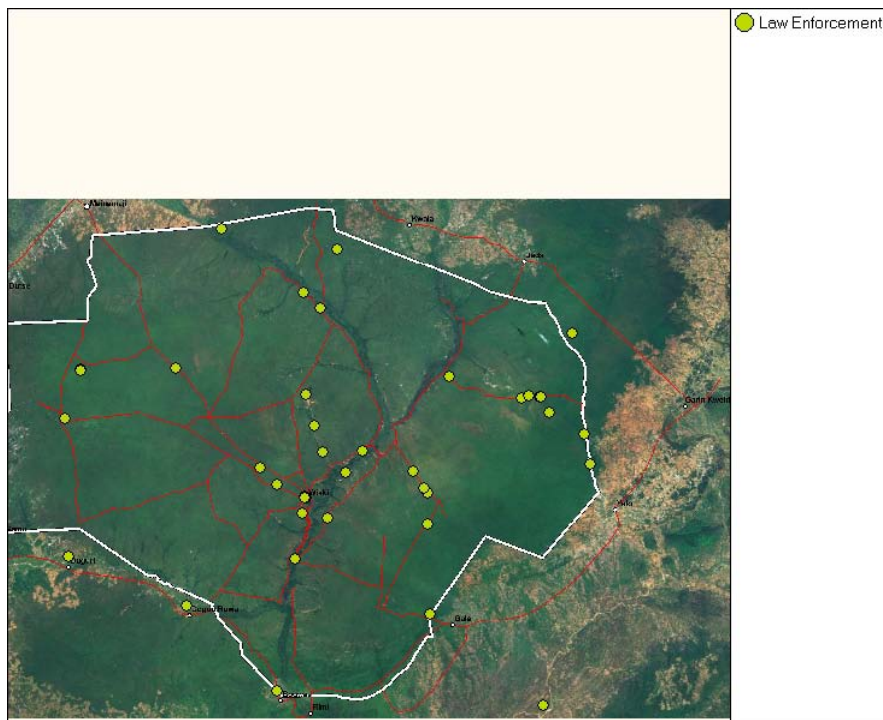


Figure 2: Yankari sites of law enforcement activity (arrests and wire snares destroyed), January 2010 – January 2011.

Objective 3: Survey levels of elephant-human conflict in the Gaji River valley area.

Activity 3.1 Conduct human-elephant conflict study.

Human-elephant conflict has been a major problem for the management of Yankari Game Reserve in 2010. However, the General Manager decided against the idea of a formal study because it is currently such a sensitive issue, and he did not want local expectations to be raised since there are no funds available for compensation. Whenever elephants stray outside the reserve, the current strategy is to send rangers to chase elephants back inside YGR's boundaries .

Funds originally earmarked for this study were used instead for the purchase of much-needed ranger uniforms in the U.S. Unfortunately, despite the fact that these supplies were requested by YGR and the Bauchi State Government, the uniforms were impounded by the Nigerian army on arrival in Nigeria in July 2010. Letters from the Chief Security Advisor to the President and Secretary to the Bauchi State Government have been submitted to help secure release of the shipment. We are also seeking the assistance of the U.S. Embassy in Abuja and have been informed that the problem is “not insurmountable.”



Part of a herd of more than 300 elephants seen close to the Gaji River in May 2010. ©WCS-Nigeria

Activity 3.2 Identify mitigation solutions and propose at least one possible solution.

This activity was postponed pending a better understanding of the elephant-human conflict issue. There has been some discussion between the YGR General Manager and the Ministry of Agriculture of Bauchi State concerning the possibility of planting pepper as a buffer crop around the reserve, as well as encouraging the use of bee-keeping to discourage marauding elephants.

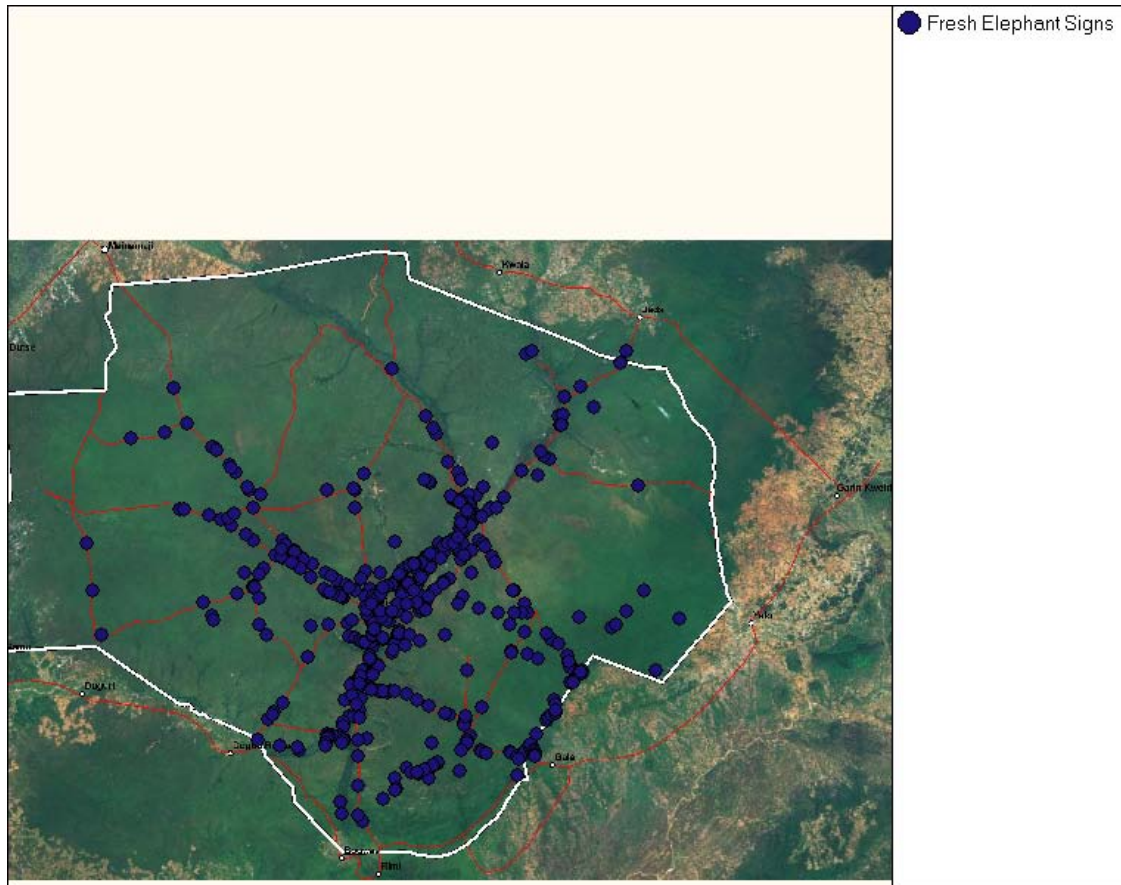


Figure 3: Elephant evidence in YGR, recorded January 2010 – January 2011.

CONCLUSIONS

- The project has made an encouraging start and has formed an effective working relationship between WCS, the Bauchi State Government and North Carolina Zoo. More overnight patrols have been conducted than in recent years, and more areas of the reserve receive at least some level of protection. During the project period from January 2010 to January 2011, there have been 108 arrests made both of hunters and livestock grazers. This compares to only 20 arrests made during a 12-month period from June 2008 to May 2009. However a great deal still needs to be done, and there is little room for complacency.
- Elephant poaching has not stopped. There were nine confirmed cases of elephant poaching during the grant period, but we believe that rates have gone down. There are no systematic records on elephant killing prior to the project, but anecdotal evidence points to the fact that elephant poaching was much higher than it is now. For example it is known that nine elephants were killed in a two-week period in January-February 2008.
- The YGR's General Manager is now better able to monitor his patrol teams through the use of CyberTracker, and is able to plan more effective patrols.

- There is improved accountability by rangers whose outputs are now more closely monitored than they were before our project began.
- The project has also improved the morale and motivation of rangers through training, the provision of field equipment and patrol rations, and by the payment of overnight camping allowances.

PLANS FOR THE FORTHCOMING PERIOD

Our future activities include plans to:

1. Work with the YGR General Manager, wildlife officers, and all rangers to further improve levels of protection; and to periodically review the patrol strategy.
2. Further strengthen the effectiveness of the WCS project in Yankari to provide constant and valued support to the reserve's General Manager.
3. Continue CyberTracker-based monitoring of Yankari, and patrol activity to document impacts on the elephant population and provide oversight of rangers.
4. Purchase a new vehicle to support reserve protection. One of the most serious constraints hindering more effective protection of Yankari is the shortage of reliable patrol vehicles.
5. Collaborate with CITES' MIKE (Monitoring the Illegal Killing of Elephants) on a proposed aerial census of Yankari Game Reserve.
6. Provide refresher training in CyberTracker for all rangers in collaboration with North Carolina Zoo.
7. Work with the U.S. Embassy to secure release of uniforms and ranger equipment currently impounded by the Nigerian military in Abuja.
8. Engage with local communities surrounding the reserve to increase levels of local awareness and improve support for conservation.
9. Document crop damage by elephants.
10. Organize an annual Yankari workshop with all relevant stakeholders to review progress, share ideas, and improve coordination.

We are deeply grateful for the partnership of the International Elephant Foundation in this critically important elephant conservation initiative.

Andrew Dunn and Gilbert Nyanganji
May 2011

Appendix 1:

Details of the 108 arrests made in Yankari Game Reserve during the period

January - December 2010

(fines are shown in Nigerian naira=N)

S/N	NAME	DATE	OFFENCE	COURT VERDICT
1	Garba Abdullahi	13/1/2010	Poaching	6 months Imprisonment
2	Muhammadu Dallil	13/1/2010	Poaching	8 months imprisonment
3	Babayo Ali	13/1/2010	Poaching	8 months Imprisonment
4	Samaila Umaru	13/1/2010	Poaching	8 months Imprisonment
5	Hussaini Sarki Aska	20/1/2010	Poaching	8 months imprisonment
6	Ayuba Musa	24/1/2010	Poaching	3 months Imprisonment
7	Mohammadu Ibrahim	24/1/2010	Poaching	6 months imprisonment
8	Barde Yaro	7/2/2010	Poaching	6 months imprisonment
9	Adamu Dan-Bauchi	7/2/2010	Poaching	6 months imprisonment
10	Ahmadu Rufai	14/2/2010	Cutting grass	2 months imprisonment
11	Ibrahim Bala	14/2/2010	Poaching	6 months imprisonment
12	Salisu Bala	14/2/2010	Poaching	3 months Imprisonment
13	Sabiu Bala	14/2/2010	Poaching	6 months imprisonment
14	Kala Babawuro	21/2/2010	Poaching	6 months imprisonment
15	Ahmadu Ali	27/2/2010	Poaching	6 months imprisonment
16	Shifu Amadi	27/2/2010	Poaching	6months Imprisonment
17	Danladi Ahmed	27/2/2010	Poaching	5 months Imprisonment
18	Adamu Garba	9/3/2010	Poaching	6 months imprisonment
19	Sule Ibrahim	9/3/2010	Poaching	6 months imprisonment and N15,000 fine
20	Shuaibu Isa	9/3/2010	Poaching	6 months imprisonment and N20,000 fine
21	Moh'd Alh. Malam Ali	12/3/2010	Grazing	2 months imprisonment & N20,000.00 fine
22	Buba Alh. Malam Ali	12/3/2010	Grazing	N12,000 fine
23	Mamman Alh Iro	17/3/2010	Grazing	N12,000 or 6 month imprisonment
24	Ardo Adamu	19/3/2010	Grazing	N20,000 fine & comp. N15,000
25	Siddi Alh. Namadi	19/3/2010	Grazing	Nil
26	Datti Hudu	19/3/2010	Grazing	Nil
27	Rabe Alh. Ja'e	21/3/2010	Grazing	N20,000 fine & comp. N15,000
28	Buba Alh. Dama	21/3/2010	Grazing	N21,000 fine & comp.N15,000
29	Alhaji Ibrahim	21/3/2010	Grazing	N20,000 fine & comp. N15,000
30	Moh'd Alh. Ali	24/3/2010	Grazing	Fine N21,000 & 6 months comp. N15,000
31	Buba Alh. Umaru	24/3/2010	Grazing	N21,000 fine & comp.N15,000
32	Alh. Gidado	28/3/2010	Grazing	N20,000 fine & comp. N15,000
33	Basher Alh. Gidado	28/3/2010	Grazing	Sick
34	Gambo Aliyu	1/4/2010	Grazing	In-prison custody
35	Da'u Moh'd	2/4/2010	Poaching	Adjourned
36	Umar Yakubu	2/4/2010	Poaching	Adjourned
37	Kiri Dawai	2/4/2010	Poaching	Adjourned to 18/5/2010
38	Mohammed Dargi	6/4/2010	Grazing	Adjourned to 18/5/2010
39	Majo Usman	6/4/2010	Grazing	Adjourned to 18/5/2010
40	Usman A. Aliya	12/4/2010	Grazing	N1,9000 fine & compensation N20,000
41	Muhammadu Yaya	14/4/2010	Poaching	N2,000 fine or 2 months; comp. N15,000
42	Bako Yaya	14/4/201	Poaching	N2,000 fine or 2 months; comp. N15,000
43	Boderi Alh. Lada	24/4/2010	Gazing	N19,000 fine/ 6 months comp.

				N20,000
44	Amadu Alh. Namadi	19/4/2010	Grazing	N19,000 fine, comp. N20,000
45	Mallam Bato	19/4/2010	Grazing	N10,000 fine, comp N15,000
46	Alhaji Lawan	19/4/2010	Grazing	N10,000 fine, comp N10,000
47	Iliay Alh. Namadi	19/4/2010	Grazing	N19,000 fine comp.N20,000
48	Manu Ado	23/4/2010	Grazing	N19,000 fine 9 months
49	Babawuro Agga	23/4/2010	Grazing	In prison custody
50	Nankat Bawa	22/4/2010	Poaching	Sentence to prison custody
51	Mamman Iliya	22/4/2010	Poaching	Sentence to prison custody
52	Julius Kya'a	24/4/2010	Poaching	Case quashed
53	Baushe Dabo	30/4/2010	Poaching	Died
54	Mallam Dankoroji	3/5/2010	Grazing	N10,000 fine, N10,000 comp.
55	Sambo Buba	23/4/2010	Grazing	Fine N21,000, comp N30,000
56	Amadi Yusuf	4/5/2010	Poaching	In prison Custody
57	Abubakar A. Aliya	5/5/2010	Grazing	In prison Custody
58	Usman Halilu	6/5/2010	Poaching	N20,500 fine, com. N20,000
59	Sulai Halilu	6/5/2010	Poaching	N6,500 fine, com. N40,000
60	Aminu Mallam Aliya	23/5/2010	Grazing	Comp.N20,000
61	Usman Mallam Aliya	23/5/2010	Grazing	N18,000 fine, com. N20,000
62	Alh Buba Bado	23/5/2010	Grazing	Case pending
63	Moh'd Idris	25/5/2010	Cutting grass	N2,500 fine,
64	Garba Usman	25/5/2010	Grazing	N20,000 fine, comp. N40,000
65	Yusuf Baushe	25/5/2010	Poaching	N2,000 fine, comp. 10,000
66	Jebbi Dan'auta	5/6/2010	Grazing	No compensation (sheep)
67	Isah Sale Gajere	5/6/2010	Grazing	N19,000 fine, comp.N30,000
68	Sale Mohammad	26/6/2010	Poaching	In prison custody
69	Kala Babawuro	26/6/2010	Poaching	In prison custody
70	Buba Dan Wakili	03/09/2010	Hunting	NA
71	Idi M Allam Shehu	05/09/2010	grazing	N2,000 fine or 3 months
72	Juli Alhaji Adamu	05/09/2010	grazing	N2,000 fine or 3 months
73	Juli Gero	05/09/2010	grazing	N2,000 fine or 3 months
74	Umaru Alhaji Kwaire	05/09/2010	grazing	N2,000 fine or 3 months
75	Ori Nylli	05/09/2010	grazing	N2,000 fine or 3 months
76	Muhammadu Wakili	05/09/2010	grazing	N2,000 or 3 months
77	Tashi Alh Kwaire	05/09/2010	grazing	N2,000 or 3 months
78	Ibrahim Ibrahim	09/09/2010	grazing	NA
79	Umaru Uro	02/10/2010	Grazing	NA
80	Ibrahim Abdul	02/10/2010	Grazing	NA
81	Musa Ibrahim	02/10/2010	Grazing	NA
82	Iro Ibro	02/10/2010	Grazing	NA
83	Yunusa Ibrahim	02/10/2010	Grazing	NA
84	Garbu Manu	02/10/2010	Grazing	NA
85	Adama	02/10/2010	Grazing	NA
86	Adamu Isa	16/10/2010	Hunting	NA
87	Abdul	28/10/2010	Illegal fishing	NA
88	Borkonoko	24/11/2010	Illegal fishing	NA
89	NA	28/11/2010	River poisoning	NA
90	Buba Dan Wakili	03/09/2010	Hunting	NA
91	Idi M Allam Shehu	05/09/2010	grazing	NA
92	Juli Alhaji Adamu	05/09/2010	grazing	NA
93	Juli Gero	05/09/2010	grazing	NA
94	Umaru Alhaji Kwaire	05/09/2010	grazing	NA
95	Ori Nylli	05/09/2010	grazing	NA
96	Muhammadu Wakili	05/09/2010	grazing	NA
97	Tashi Alh Kwaire	05/09/2010	grazing	NA
98	Ibrahim Ibrahim	09/09/2010	grazing	NA
99	Umaru Uro	02/10/2010	Grazing	NA
100	Ibrahim Abdul	02/10/2010	Grazing	NA

101	Musa Ibrahim	02/10/2010	Grazing	NA
102	Iro Ibro	02/10/2010	Grazing	NA
103	Yunusa Ibrahim	02/10/2010	Grazing	NA
104	Garbu Manu	02/10/2010	Grazing	NA
105	Adama	02/10/2010	Grazing	NA
106	Adamu Isa	16/10/2010	Hunting	NA
107	Abdul	28/10/2010	Illegal fishing	NA
108	Buba Dan Wakili	24/11/2010	Illegal fishing	NA