BFA SEMINAR SERIES NO. 30

MARWELL ZIMBABWE TRUST ATTACHMENT STUDENT PROJECTS

Held at Ulwazi Institute, Suburbs, Bulawayo, on 28 May 2004.

The Consumption and Availability of Bushmeat at Rural and Urban Markets in Zimbabwe.
Researcher: Justice Muvengwi (Bindura University of Science Education). Small Antelope Project Attachment student.

The project was completed in May 2004. The project objectives were:

- To determine the availability of bush meat markets in both rural and urban meat markets,
- To record the species being sold, and
- To compare the prices of bush meat and that of domesticated animals.

The survey was carried out by means of interviews and questionnaire in Matabeleland North and South Provinces (Bulawayo, West Nicholson and Nyamandlovu districts) and Masvingo Province (Chiredzi district).

Data were collected from:

- Resettlement areas in Nyamandlovu, West Nicholson, Chipimbi (20 respondents per area)
- Reata and Ndali CAMPFIRE areas (20 respondents per area)
- Urban butcheries in Bulawayo, Nyamandlovu, West Nicholson and Chiredzi towns (25 butcheries in total)
- Gonarezhou and Matopos National Parks (20 scouts/wardens in each Park)
- Police stations in Nyamandlovu, West Nicholson and Chiredzi
- Veterinary departments in Nyamandlovu, West Nicholson and Chiredzi

It was determined that there is a well established but informal bushmeat market in southern Zimbabwe. Although some long distance transport of game meat occurs (Table 1), most animals were utilised locally or transported to the nearest town (Table 2). In all areas, game meat is allegedly supplied to rural communities on Public Holidays (source of meat and providers were not established). In all three provinces, rural communities preferred game meat to meat of domesticated livestock. Additionally, utilizable livestock holdings were calculated to be insufficient to meet protein demands in rural communities, so high levels of bushmeat utilisation are likely to continue. Commercial poachers (as opposed to poachers that hunt "for the pot") are believed to have an informal network of clients in urban centres.

Wire snaring, hunting with dogs and use of firearms were the most common methods of hunting and rural communities expressed concern that their livestock was also being targeted. In Nyamandlovu, 'townspeople' allegedly poached game and cattle using rifles. The most commonly poached animals were impala, kudu, common duiker and warthog. However, eland and other antelope were also identified as being vulnerable to poaching.

Nyamandlovu had the highest number of cases of poaching, illegal trapping and transport of carcasses along major roads (Table 1, Figure 1). However, it is probable that Police and Veterinary Department effort in all three areas sampled were not comparable, so direct comparisons should be

made with caution. Certainly, Nyamandlovu was the only district sampled in which there was a permanent Veterinary roadblock. It was established that the source of the majority of game meat in the Nyamandlovu area was from the Winter Block, and local communities claimed that the railway between Bulawayo and Victoria Falls was used to transport meat.

In 2003, 154 cases of poaching were reported in Gonarezhou National Park (GNP), compared with 86 cases in Matopos National Park (MNP). The majority (80%) of arrested poachers in GNP were Zimbabwean, the remainder were Mozambican. Snares and firearms were used in GNP, and elephant, impala and kudu formed the bulk of poaching cases. In MNP, most arrested poachers were from the Tuli area, and they used snares and dogs to hunt warthog, wildebeest, reedbuck and sable. Fencing wire from National Park boundaries was reportedly appropriated by poachers to make snares.

Of 25 butcheries sampled, eight did not sell game meat at all, seven sold meat in the hunting season and nine always had game meat on sale. Sources of game meat were reputedly safari operators and game meat was, on average, half the price of beef ($6000/kg compared to $12,000/kg). No food outlets sold game meat, as they claimed there were no reliable suppliers and obtaining licenses to sell meat was problematic.

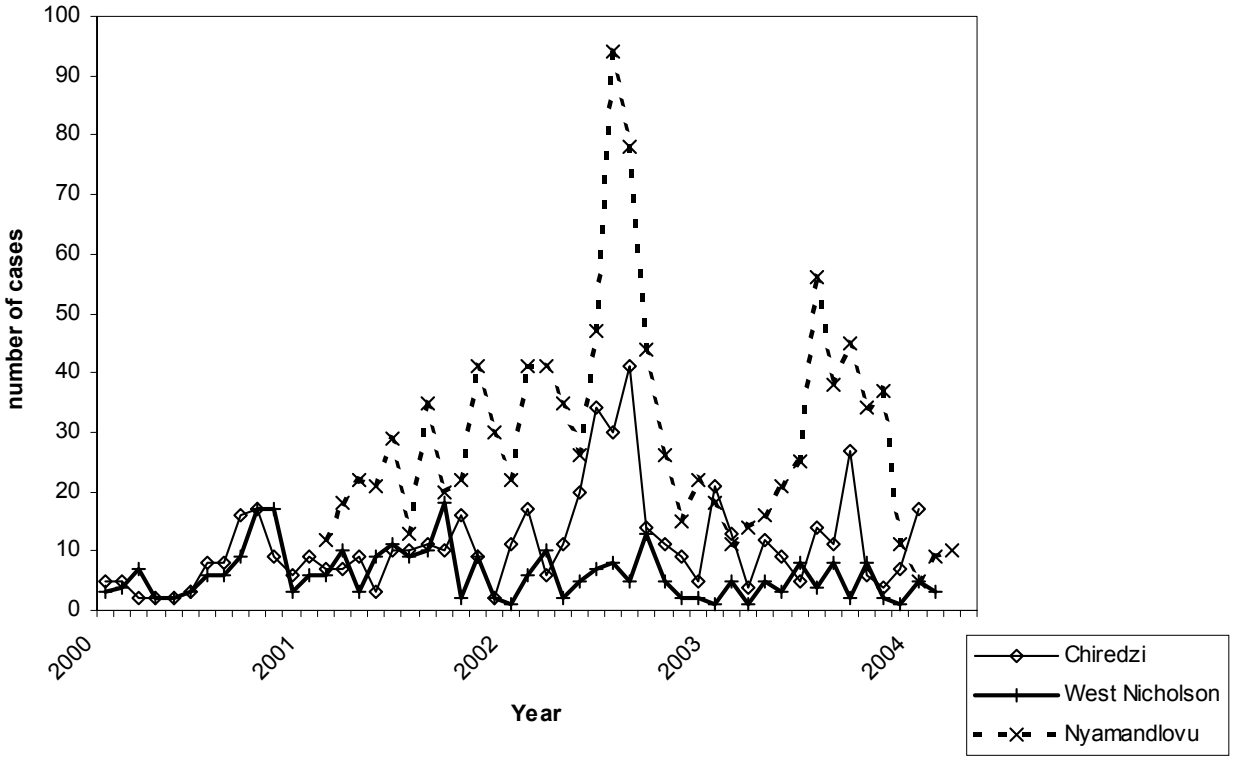

Figure 1. Number of poaching cases recorded at police stations in Nyamandlovu, Chiredzi and West Nicholson between 2000 and March 2004.

Table 1. Cases of poaching and illegal transport of game meat in the three provinces.

Area	Information source	Trapping/ poaching cases (2003)	Confiscated meat (2003)	Notes
Nyamandlovu	ZRP, permanent vet. roadblock	480	34 carcasses (21 impala, 9 common duiker, 3 kudu, 1 eland)	Majority of carcasses destined for Bulawayo, except 5 carcasses (impala) en route to Vumba
Chiredzi	ZRP, temporary vet. roadblock	300	15 carcasses (1 warthog, 4 common duiker, 10 impala)	
West Nicholson	ZRP	155	-	
Gonarezhou National Park	National Parks	154	-	Predominantly elephant, impala and kudu. Most poachers Zimbabwean
Matopos National Park	National Parks	86	-	Warthog, wildebeest, reedbuck, sable, hyraxes. Most poachers from Tuli area

Table 2. Poaching and game utilisation in rural areas.

Sample area	Lifestyle	Major markets	Poaching methods	% respondents preferring game meat	Notes
Ndali & Delmerfish, CAMPFIRE	Subsistence farmers	Chiredzi, Save, Chipinge	Snaring	92%	Impala, kudu, common duiker
Chipimbi	Subsistence farmers	Chiredzi, Save	Snaring	92%	Antelope, warthog
West Nicholson	79% subsistence farmers	Masase, Mberengwa, Zvishavane	Snaring	58%	Antelope, warthog
Nyamandlovu	80% subsistence farmers	Bulawayo, Victoria Falls	Snaring, firearms	61%	Common duiker, impala, eland, kudu. Winter Block is main source

A Survey of Densities of Domestic Dogs (*Canis familiaris*) in Five Different Land-use Types of Bulilima and Mangwe Districts of Zimbabwe: Possible Implications for Cheetah (*Acinonyx jubatus*) Survival.

Researcher: Hlengisizwe Ncube (National University of Science and Technology). Cheetah Project Attachment Student.

The project was completed in May 2004. The project objectives were:

- To determine the densities of domestic dogs in each of five land-use types in Matabeland South
- To compare dog densities in newly resettled areas with pre-resettlement (large-scale commercial farm) densities,
- To investigate the reasons for keeping dogs,
- To determine the potential impact of domestic dogs on cheetah populations.

The survey was carried out by means of interviews and questionnaires in the Bulilima and Mangwe districts of Matabeleland. Five land use types were investigated:

- Communal areas adjacent to wildlife concessions (30 respondents)
- Communal areas far from wildlife concessions (30 respondents)
- A2 resettlement schemes (30 respondents)
- A1 resettlement schemes (30 respondents)
- Large-scale commercial farms (14 respondents)

The mean number of domestic dogs per household ranged from 0.33 (A2 resettlement) to 1.73 (communal areas far from wildlife concessions). Differences in the number of dogs per household were not statistically significant (one-way ANOVA, $F_{129} = 0.08$, $p > 0.05$). However, the density of dogs was highly significant (one-way ANOVA, $F_{129} = 1.57$, $p << 0.05$), with large-scale commercial farms having much lower dog densities (0.029 dogs/km^2 compared to 3.84 dogs/km^2 in communal areas adjacent to wildlife concessions). Additionally, large and small-scale (A2 resettlement) farmers tended to restrict their dogs' movements by keeping them in enclosed areas. Most communal and A1 resettlement farmers allowed their dogs to roam freely.

Resettlement and communal farmers kept dogs primarily for guarding homesteads, livestock and crops, whilst large-scale commercial farmers kept dogs as pets and homestead guard dogs.

It was evident from the survey that the density of domestic dogs post-resettlement has increase dramatically in former large-scale commercial farmland. This could have serious implications for cheetahs, especially since resettled farmers do not tend to restrict their dogs' movements. Four cheetahs were reportedly killed by domestic dogs in 2003 in the district. Furthermore, domestic dogs are potential competitors of cheetahs and have been reported to chase cheetahs off kills (Peek 1995).

References:

Peek, B. (1995). Hunting Leopard with Dogs. Around CAMPFIRE. *African Hunter* Vol. 5, No. 6.

Soil Erosion Control, *Lantana camara* Encroachment and Vegetation Mapping at Dambari Field Station, Bulawayo.
Researcher: Precious Moyo (National University of Science and Technology). Dambari Biodiversity Project Attachment Student.

The project was completed in May 2004. Its objectives were:

- To compare the efficacy of three soil erosion control methods (contour ridging, scarification and mulching)
- To map vegetation at Dambari Field Station and determine antelope browse species availability
- To determine the degree of *Lantana camara* encroachment.

Soil Erosion Control
Control methods were assessed using a randomised block design. Three blocks were demarcated on the same contour at similar topographical gradients. Each block comprised four plots of 2 x 2 m. Each of the three treatments and a control were assigned to a plot in each block.

Erosion control efficacy was determined by measuring the dry mass of plant matter four months after treatment application. Although not statistically significant, scarification yielded the highest biomass (one-way ANOVA, $F_{12} = 4.76$, $p > 0.05$), followed by contour ridging and mulching. It was recommended that all three erosion control methods be employed simultaneously to obtain optimal results.

Vegetation map and Lantana *encroachment*
Dominant vegetation communities at Dambari Field Station were determined by ground surveys. Each section (defined on the survey map) was sampled separately (Table 3), and soil wetness factor and texture were also determined. Tree density (using the point centre quarter method) was calculated to be 434 trees per hectare. Few species suitable for browse for the antelope collection were present, and it was recommended that trees be planted to improve the self-sufficiency of Dambari.

Table 3. Environmental features, vegetation and encroachment on plots at Dambari.

Sect.	Physiognomic type	Dominant trees	Dominant grasses	Lantana encroachment[1]	Erosion extent[1]	Wetness factor	Soil texture
1a	Grassland	Dichrostachys cinerea & Acacia nilotica	Heteropogon contortus	1	1	W1	Sandy clay loam
1b	Woodland savanna	Acacia gerradii & A. nilotica	Eragrostis spp.	1	1	W1	Clay loam
2	Grassland	D. cinerea	Hyparrhenia sp. & Setaria anceps	1	1	W1	Sandy clay loam
3a	Woodland savanna	A. gerrardii	Eragrostis & H. contortus	2	2	W1	Sandy clay loam
3b	Grassland	A. gerrardii	Brachiaria brizantha & Hyparrhenia sp.	1	1	W1	Sandy clay loam
4	Woodland	D. cinerea	Eragrostis & H. contortus	3	2	W1	Clay
5a	Grassland	Acacia karroo & A. gerrardii	Hyparrhenia sp. & S. anceps	2	1	W1	Silty clay loam
5b	Woodland savanna	A. karroo	Eragrostis & Hyparrhenia sp.	1	1	W1	Silty clay

5c	Grassland	A. karroo & A. nilotica	Hyparrhenia & S. anceps	1	1	W1	Silty clay loam
6a	Grassland	A. karroo & A. rehmanniana	S. anceps	1	1	W1	Silt loam
6b	Woodland	Poplars	S. anceps	1	1	W1	Silt loam
7a	Woodland	A. karroo, A. rehmanniana, A. nilotica	Hyparrhenia sp.	4	3	W1	Silty clay
7b	Woodland	A. karroo & D. cinerea	Hyparrhenia sp.	2	2	W1	Silty clay loam

[1] Categories for *Lantana* encroachment and soil erosion levels: 1 – absent or low; 2 – moderate; 3 – high; 4 - severe.