

Quarterly report April 2009

The ecology of the African buffalo (*Syncerus caffer*) in the Okavango Delta, Botswana

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The end of March coincided with the end of the wet season, according to my proposal. I managed to sample all of the sites that I aimed for during the wet season, a total of 120 sites. I collected 180 faecal samples from 18 herds throughout the season and was able to collect population dynamics data from over 1,300 animals.

I was not able to collect as much information on population dynamics as during the last season, but this is because of reduced visibility of the herds as a result of the denser habitats that they have been using. Most of the time I was unable to obtain an accurate estimate of the herd size, and was rarely able to see more than 50 animals during a sighting.

On the 21st January, 2009, collar B76 sent a mortality signal, indicating that it had not moved in several hours. I waited for a few days, then drove out to the location sent by the collar. I found it on the ground, having come off the animal. Upon examination, it appeared that the collar had broken at the remote release mechanism point. I retrieved all of the data from the collar, then sent it back to the manufacturers to be repaired and for the remote release to be de-activated and reinforced. The collar was sent back to me a few weeks later.

On the 9th March, 2009, collar B75 emitted a mortality signal, then on the 16th March, 2009, collar B73 did the same. I retrieved both collars, finding that they had also broken at the remote release mechanism. This meant that, of the original collars put out in December, 2007, there was only one left on a buffalo cow, collar B74. This collar abruptly ceased sending GPS data on the 10th March, 2009, but the collar is still on.

Collar B77 started sending slightly strange data through, which was interpreted by the manufacturers as being an issue with the cables linking the GPS unit to the processing unit. It was not a big problem at first, but became one after several weeks, when the collar ceased sending GPS data at all.

In order to retrieve collars B74 and B77, I applied for a darting permit (**WP/RES XV 15/2/2 (120)**), which was issued by Dr. Lucas Rutina. This permit was initially for Bruce Wittels, who agreed to attempt a darting from a vehicle. We managed to get close enough to B77 to dart her and remove her collar, replacing it with the refurbished B76. B74 was in very dense mopane that prevented us from getting a clear shot at her. I have therefore asked for the permit to be re-issued with Rob Jackson's name on it, as he will be willing

to make another attempt should the collared animal move into a habitat in which it can be more readily approached. I will send through a full report on these dartings once I have tried again with Rob Jackson, which should be at some point next week.

The collars that I have managed to retrieve have been sent back for repair, and will hopefully return in the next few weeks so that I can put them out again.

The store on board collars that were put out in October, 2008, went missing for several months. B7 has stayed between the Santantadibe and the Boro rivers, in the same area as B78. Of the others, B5 was seen in NG43 in December, and nothing was heard from the rest until recently, despite several tracking attempts. Tico McNutt was asked to listen for signals from these collars during his flights tracking collared predators. At the end of March, he picked up a signal from B3 in NG43. A week later, he also picked up a faint signal from B2, much further south-east, but did not get a fix on the collar. I went out to check on B3, only to find the collar lying on the ground. It had been significantly damaged, and the GPS unit was missing. The signal had not been heard during any earlier tracking flights, so it must have stayed on the animal until at least mid-March. Unfortunately, the GPS unit must have been damaged sooner, as there were no fixes available after November. This was a disappointment, as I had been hoping that this collar would indicate where the other animals had gone. These collared animals should return to the Gomoti system once the pans in mopane dominated areas start to dry up, so I intend to replace one of the store on board collars with a refurbished satellite collar so that I can track their movements next year. I believe that they headed many kilometres to the south-east, towards Masumi, and maybe even towards Nxai Pan, but will have to wait to prove this.

I have been looking at the fixes obtained by all of the satellite collars during the wet season. So far, I have determined the habitat type and activity for 5,174 fixes. On average, the buffalo herds spent 38.3% of their time in dense mopane, 26.0% of their time in grassland, 18.8% of their time in low mixed woodland and 12.0% of their time in open mopane. There are other habitat types that have been used, including open acacia and riparian woodland. Some GPS fixes were also taken in pans and on roads. The herds spent a maximum of 2% of their time in each of these habitat types, so they were left out of the sampling regime and analysis.

The habitat types used by the herds during the wet season are completely different to those used during the early and late flood, when the herds spent their time in areas dominated by floodplains.

In terms of activity patterns, herds spent 63.9% of their time grazing, 30.0% of their time resting and ruminating, and 6.1% of their time walking.

In contrast to last year, the herds on the eastern side of the study area spent very little time in NG43, mainly occupying NG34, with a couple of weeks spent in NG43 and in the Moremi Game Reserve (see Fig 1).

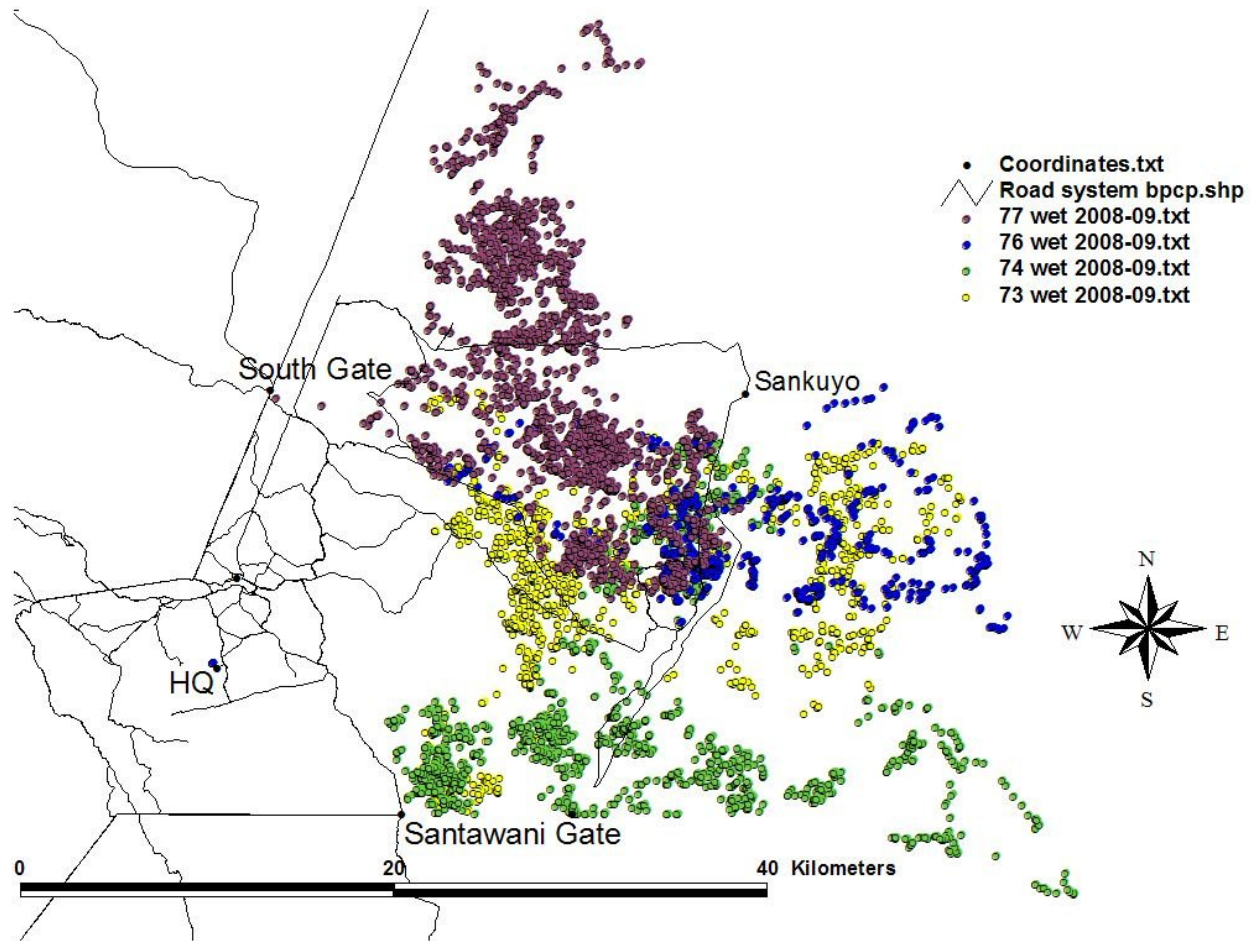


Figure 1: 2008 – 09 wet season fixes for B73, B74, B76 and B77

B77 did not spend any time in NG43, but did go up into the Moremi Game Reserve. B73 and B74 both spent some weeks close to Santawani Gate but did not use areas north of South Gate. In a similar way to during the flooding seasons, the herds are using slightly different, albeit overlapping, areas.

Last year, B75 spent the majority of the wet season in NG17 and the lower part of Chief's Island, but this year she stayed in NG32, between the Santantadibe and the Gomoti, for the entire season (see Fig 2).

B78 spent all of the wet season in NG32, between the Boro and the Santantadibe. There was no overlap between B78 and B75, nor between either of these and any other satellite collared herd. However, one of the store on board GPS collars, B7, has been in the same area as B78 for the entire wet season, although not always in the same herd.

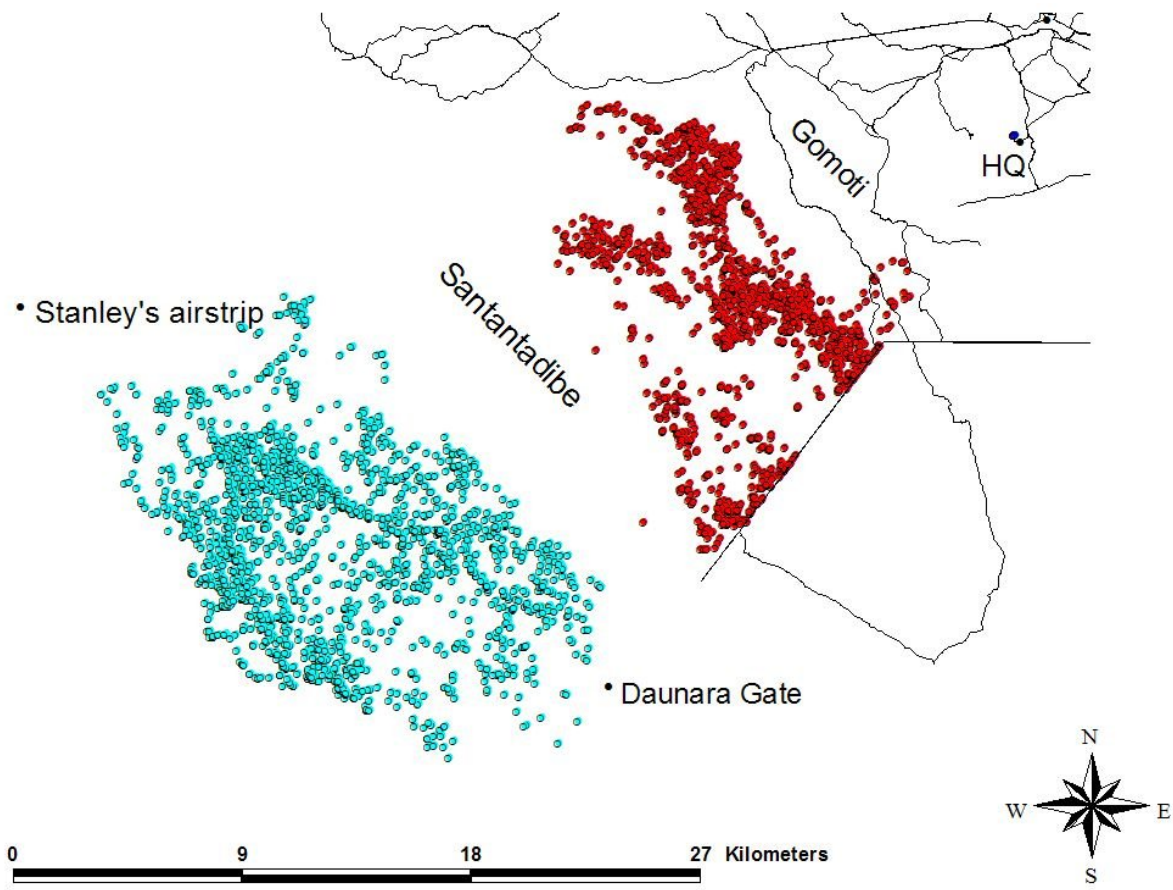


Figure 2: 2008 – 09 wet season fixes for B75 (red) and B78 (blue)