

ABSTRACT

In 2004 Molemane Eye Nature Reserve was stocked with 46 disease-free buffalo with the intention of generating sustainable revenues for the Reserve. However, the buffalo's poor population growth rate and poor body condition during the dry seasons led to management reducing the buffalo population to 21 animals in 2010. The buffalo's poor performance has drawn the attention to the potential nutritional limitations of the forage available during the dry season and to the importance of key resource areas. I examined the nutritional content of the buffalo forage using faecal analyses as proxy for nitrogen (N) and phosphorus (P), expecting a nutritional stress towards the latter part of the dry season. Data from the GPS/GSM collar on one of the buffalo cows was used to determine the dry season vegetation type selection and to identify key resource areas. A comparison of veld conditions was also done on the lowland vegetation types on Molemane Eye Nature Reserve and an adjacent property (Eye Area), which was earmarked for incorporation, to determine whether veld restoration work was required prior incorporation. It was established that the extended period of poor forage quality during the 2010 dry season was an important limiting factor for the buffalo as the forage quality dropped below the buffalo minimum nutritional requirements ($N_f < 1.52\%$, $P_f < 2\%$). A faecal sampling during early 2011 indicated that the nutritional stress period may last as long as 5 months (April to August). The buffalo did not select the vegetation types in proportional to their availability and narrowed their selection as the dry season progressed, preferring those containing woody elements. Of the 8 vegetation types identified as key resource areas for buffalo during the dry season, the Eye Area holds 4 and contributes less than 5% to the key resource area already available on Molemane Eye Nature Reserve. The overall veld condition of the two areas was similar and no veld restoration work was deemed necessary. Although the incorporation of the Eye Area will shorten the distance between water and forage areas and have some nutritional benefits for buffalo in the dry

season, mineral supplementation will be necessary for these valuable animals to become more productive and contribute to the economic objectives of Molemane Eye Nature Reserve.