Project Update: February 2013

I have completed my first research chapter at Chelmsford Dam. The aim was to determine how seasonal changes in grass quality influence oribi foraging and ultimately answer the question, how do oribi survive the dry season? I conducted my research from June-August 2012 and then from October 2012 through of February 2013. This allowed me to gather data from winter (dry), the transitional period and finally summer (wet).

Dietary contribution:

Throughout the wet season oribi consumed 19 different species with five species (*Hyparrhenia hirta*, 59%, *Diheteropogon amplectans,* 16%, Triangle stem grass, 11%, *Leersia hexandra,* 3% and *Themeda triandra,* 3%) making up 92% of their diet. Grass species contributed 89% with forb species contributing 11% of the total diet. However, in the dry season oribi consumed 23 different grass species with five species (*Hyparrhenia hirta*, 58%, *Heteropogon contortus*, 13%, *Themeda triandra*, 9%, *Pennisetum clandestinum*, 4% and *Paspalum urvillei*, 3%) making up 87% of the diet. In contrast to the wet season, grass species contributed 99% of the diet and forbs only 1%. This dietary expansion during the dry season was expected as oribi likely feed on more species to try and meet their energetic requirements with declining nutritional quality. Everett and Perrin (1992) also found that during summer, forbs played a more important role in oribi diets.

Overall, oribi do show seasonal selection in the grass species they consume. However, across the seasons there a few species (*Hyparrhenia hirta* and *Themeda triandra*) that remains a major contributor to oribi diets.

Functional responses to sward height:

Bite mass increased linearly with increasing grass height during the dry season. However, there was no relationship between bite mass and grass height during the wet season. The mean bite mass to sward height differed between seasons with the wet season having a higher bite mass relative to grass height. During the dry season oribi preferred to feed on short grass (< 10 cm) compared to the wet season where they fed on grass between 10 and 20 cm in height.

Overall, bite rate decreased with an increasing grass height. However, bite rate did not differ between seasons independent of grass height and bite rates on the same grass height were very similar between seasons. During the dry season maximum bite rates ~70 bites/min were obtained on grass up to 10 cm high. Whereas, in summer maximum bite rates ~60 bite/min were obtained on grass up to 20 cm high.

Seasonal trends in feeding measures:

Bite mass averaged 0.009 g in the dry season. Thereafter, bite mass increased to 0.019 g in the wet season. Bite mass was the highest in December, January and February following the high rainfall in September, October and November.

Mean bite rate remained between 36 and 42 bites/min over both the wet and dry seasons. However, oribi achieved higher bite rates (50 – 56 bites/min) on firebreaks and during October (52 bites/min).

Mean intake rate varied between 0.26 and 0.50 g/min during the dry season. Interestingly, oribi could only maintain an intake rate of 0.49 g/min on the firebreaks. This is most probably due to a reduced bite rate on the short grass. Therefore, the importance of firebreaks may not necessarily be due to an increased intake rate but rather an increased nutritional intake rate due to increased grass greenness. During the wet season, intake rate varied between 0.87 and 0.91 g/min. This increase in intake rate is due to an increase in bite mass following the high rainfall in September, October and November.

Nutrient gains:

Samples of the major species eaten in the different seasons has been collected will be sent off for chemical analysis. Once I have received the results, I will be able to determine how the nutritional quality of the grass changes seasonally.