



Biological  
Sciences

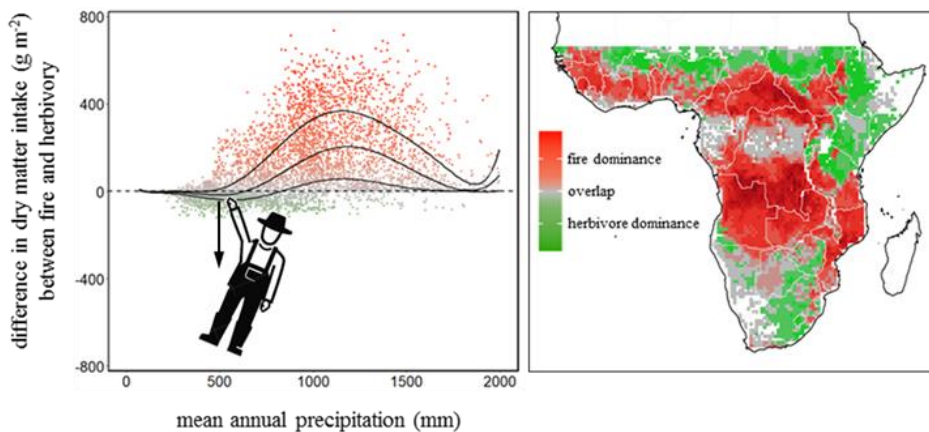
## Departmental Seminars 2017

**Wednesday 22 November** 13:00-14:00

Niven Library



### *Implications of historical interactions between herbivory and fire for rangeland management in African savannas*



**Zander  
Venter**

Mailing list: [biosci-seminars-l@lists.uct.ac.za](mailto:biosci-seminars-l@lists.uct.ac.za)  
Contact : [biocipostdocs@gmail.com](mailto:biocipostdocs@gmail.com)

Herbivory and fire are important drivers of ecosystem processes within African rangelands. I explore whether mid-Holocene African savannas were dominated by herbivory as a means of cycling nutrients, and whether fire perhaps played a lesser role than today. Evidence from savanna ecology, paleoecology, and historical literature indicate higher herbivore densities in mid-Holocene and pre-colonial times compared to present. While fire may increase or decrease forage availability for herbivores, depending on the nutrient status of the environment, herbivory tends to decrease fire intensity and frequency by decreasing fuel loads. Given this competitive relationship between fire and herbivory and the higher herbivore densities of the past, I suggest that some fire-dominated present-day savannas are the product of anthropogenic alterations in herbivore and fire regimes, including the increasing use of fire as a tool for managing ecosystems. I will discuss whether managing for an alternative stable state dominated by herbivory could stimulate ecosystem processes such as nutrient cycling and production, and whether this will achieve the same management objectives traditionally satisfied by fire.

Management implications may include the adaptive manipulation of herbivore densities over time and space to maintain an appropriate carrying capacity for the rainfall and soil nutrient status of the area, occasional use of fire, and including a diversity of herbivore functional guilds.