# Savanna fires; impact on herbivore behaviour and habitat choice

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## Introduction & Aim

Burnt and unburned areas form a mosaic pattern in the landscape which provides a varying quality of food and therefore attract different species of herbivores (1). The re-grown grass following a fire has a high nutritional value but the quantity is relatively low (2). The aim with this study was to see how habitat use and behaviour within herbivores in general, Burchell's zebra (*Equus burchelli*) and wildebeest (*Connochaetes taurinus*) changed between different types of burned savanna

## Methods

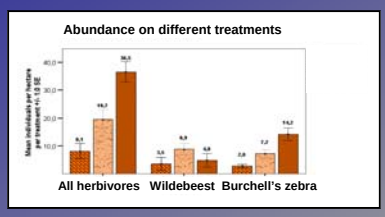
Areas used were burnt in June (E) and October (L) 2004. Areas not burnt served as controls (C). 36 transects, 1.0 km long and 300 m wide were selected, 9 in E, 9 in L and 18 in C. Transects were driven once per hour 6:30 -18:30. 20 grass samples cut per transect to record biomass. The study was carried out in the Mara Triangle, Maasai Mara National Reserve, Kenya, between September 2004 and January 2005

## Conclusions

- **Abundance differed between treatments**
  - -quality and quantity of food supply
  - -morphology
  - -nutritional requirements
- **Fire useful as management tool**
  - -enhance patchiness
  - -create habitats
  - -increase species diversity

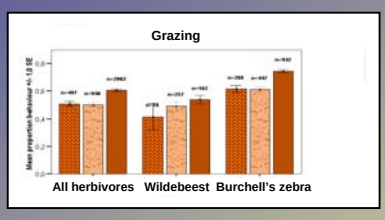
## Results

### Abundance

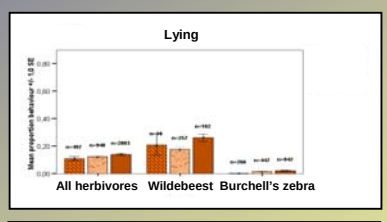



| | Significance | | |
|---|---|---|---|
| | C/E | C/L | E/L |
| All herbivores | P = 0.003 | P < 0.001 | P = 0.009 |
| Wildebeest | P = 0.007 | P = 0.002 | NS |
| Burchell's zebra | P = 0.005 | P < 0.001 | P = 0.031 |

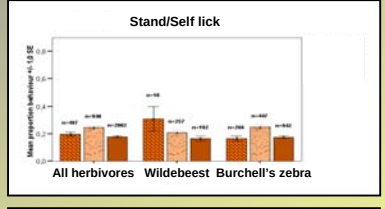
### Behaviour on treatment



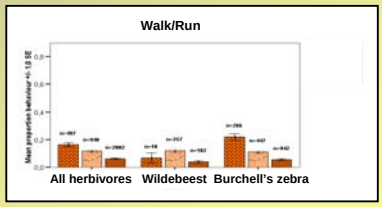

| | Significance | | |
|---|---|---|---|
| | C/E | C/L | E/L |
| All herbivores | NS | P < 0.001 | P < 0.001 |
| Wildebeest | NS | NS | NS |
| Burchell's zebra | NS | P < 0.001 | P < 0.001 |




| | Significance | | |
|---|---|---|---|
| | C/E | C/L | E/L |
| All herbivores | P = 0.045 | P = 0.005 | NS |
| Wildebeest | NS | NS | P = 0.026 |
| Burchell's zebra | P = 0.014 | P = 0.004 | NS |


| | Significance | | |
|---|---|---|---|
| | C/E | C/L | E/L |
| All herbivores | P=0.003 | NS | P < 0.001 |
| Wildebeest | NS | P = 0.046 | NS |
| Burchell's zebra | P = 0.003 | NS | P < 0.001 |




| | Significance | | |
|---|---|---|---|
| | C/E | C/L | E/L |
| All herbivores | NS | P < 0.001 | P < 0.001 |
| Wildebeest | NS | P = 0.022 | P < 0.001 |
| Burchell's zebra | P < 0.001 | P < 0.001 | P < 0.001 |

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**References**
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**2.** Gureja N & Owen-Smith N (2002) *Comparative use of burnt grassland by rare antelope species in a lowveld game ranch, South Africa.* South African Journal of Wildlife Research 32:1, 31-38.