

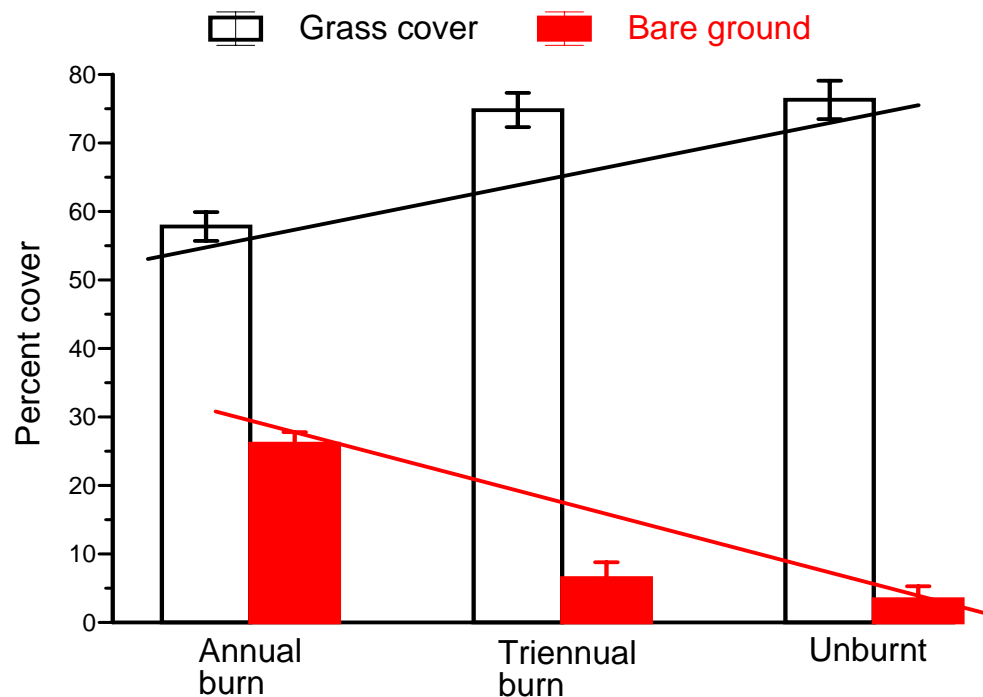
The Distribution of Large Herbivores in a Fire-managed Savanna Grassland: Assessing the Role of Bottom-Up Processes

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- Work was conducted on three burn treatments (annual, triennial and unburnt), on three Experimental Burn Plots, Satara Region.

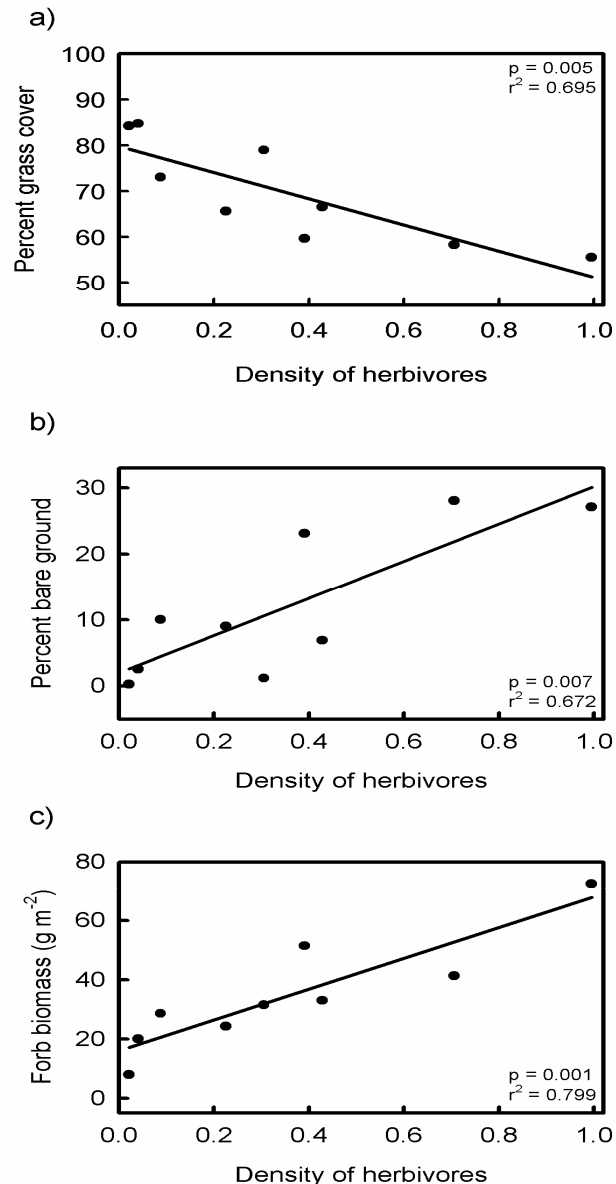
-We surveyed herbivore distribution and various measures of plant community structure



Forage quality

There was no difference in leaf tissue nitrogen and carbon, the C:N ratio, the Total N, or the Total C between burn treatments across blocks.

Figure 1. Mean percent grass and bare ground cover in each treatment.



Herbivore habitat preference was:

- **uncorrelated** with forage quality (C and N content) and distance to nearest water source,

- significantly and **positively correlated** with percent bare ground and forb biomass

- and **negatively correlated** with grass biomass.

Figure 2. Correlations between herbivore density (animals ha⁻¹ survey⁻¹) and relative % grass cover (a), % bare ground (b), and forb productivity (c) for the entire growing season.

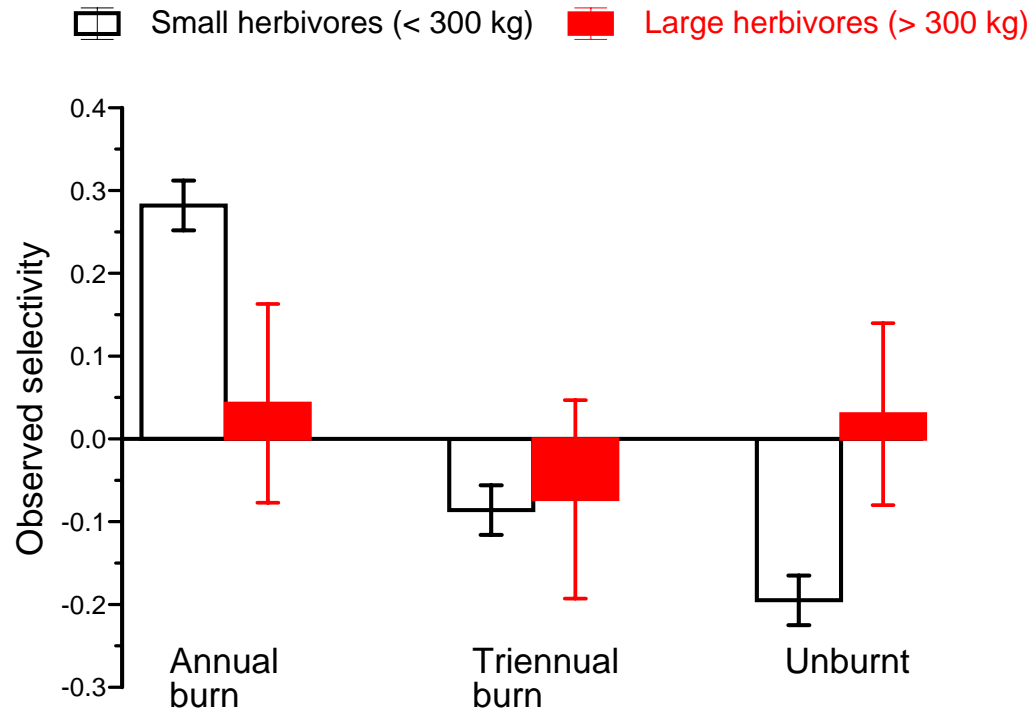


Figure 3: Observed selectivity of large ($>300\text{kg}$) and small ($\leq 300\text{kg}$) herbivores for each burn treatment. Positive values indicate preference, and negative values avoidance.

➤ Why are small herbivores selecting for annually burnt plots when there is no difference in forage quality across treatments?

- Bottom-up forces such as forage quality and quantity alone, are not sufficient to explain herbivore habitat preference. Both bottom-up and top-down forces in the form of size-selective predation pressure likely play a role in determining the distribution of herbivores in this system.

