The effects of fire history on soil nutrients, soil organic carbon and soil respiration in a semi-arid woodland savanna, Central Namibia

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Fire

Soil: nutrient status

Soil: microbes

Soil: carbon

Vegetation: diversity

Vegetation: palatability

Animal: diversity

Game: movements

Animal: Condition

Vegetation: structure/function/habitat
Objectives

- To determine the effects of time since last burn on soil organic carbon and soil nutrients.
- To determine whether soil respiration (also as a proxy for soil microbial biomass) responds to time since last burn in the same way under different vegetation patch types (bare ground, under grass and under shrub).
Study site & methods

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<th>Fire treatment</th>
<th>Time since last burn (year)</th>
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Findings

- Current fire regimes have no detrimental effects on soil organic carbon and nutrients.
- Fires were not sufficiently intense to cause detrimental impacts and impair soil resources recovery.
- Fire may have important indirect effects on soil respiration by decreasing the cover of shrubs.
- The higher soil respiration observed under shrubs in the field experiment is largely attributed to root respiration.
Thank You!