

Abstract:

African savannas are seasonal ecosystems experiencing a significant dry period each year. During the dry season, water scarcity has both, spatial and temporal consequences on the movements of large mammals. Some mammals can cope with these resource restrictions better than others. These water independent mammals predominantly feed on browse (giraffe, kudu, eland) and can be found further from water sources. However, these mammals can utilize areas near rivers as these areas provide food resources. Water dependent species are predominantly grazers and non-ruminants (zebra, wildebeest, elephant). Water shortage during a dry season restricts the movements of these species, which can be generally found in the vicinity of water bodies. Carnivore species (lions) react on the spatial restrictions of ungulates by adjusting their hunting areas to the vicinity of water sources. Both intra-guild (African wild dog) and inter-guild prey species (ungulates) develop anti-predatory strategies such as temporal and spatial segregation. African wild dogs use dens far from water points and ungulate species use to drink during daytime when lions are not active. Spatial and temporal segregation are also strategies to cope with competitors. Daily patterns of water point visitations can vary suggesting other factors (e.g., thermoregulation) also affect these patterns.

Key words: water use, spatial distribution, ecological space, mammals, Africa, seasonality, competition, predation