

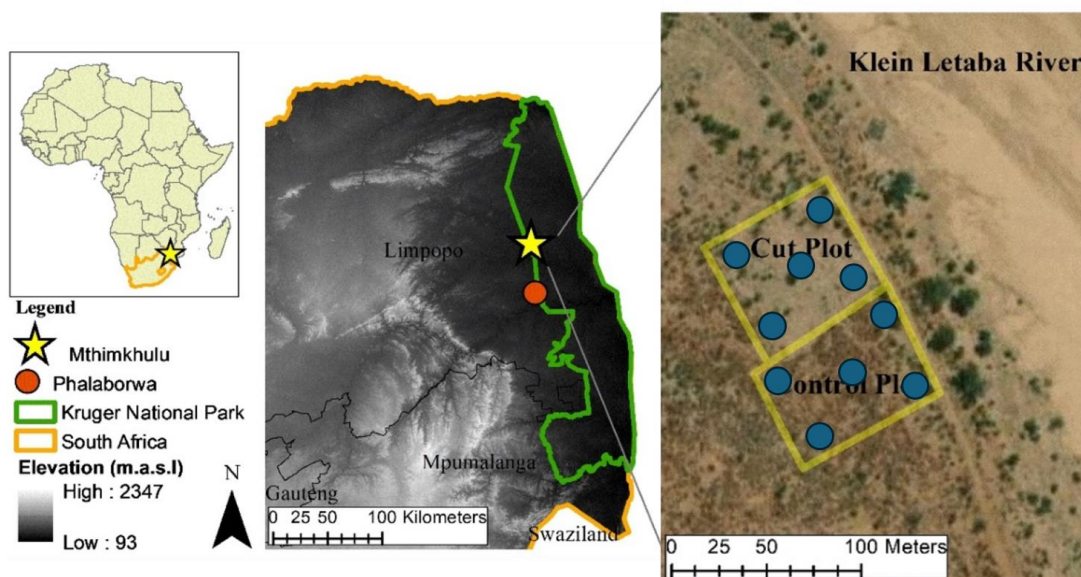
Bachelor Thesis Announcement: Belowground ecological consequences of global-change induced Mopani encroachment in South Africa's Krueger National Park

Motivation:

Climate and land-use change, jointly affect fire regimes in South Africa's lowland savannas, one of the major reasons for the encroachment of the woody legume "*Colophospermum mopane*". As a benefit presumably favoring its spread is the high nutritional value of the caterpillar *Gonimbrasia belina*, feeding on the high-N leaves of this tree. However, *C. mopane* is significantly enhancing transpiration of the landscape and by that strongly changing belowground water availability, with yet unknown consequences for the soil microbiome and its functionality.

Research question:

How is the belowground microbiome in direct proximity of the *C. mopane* roots (legume rhizosphere effect) affected and how does the general shift in ecohydrology affect the bulk soil and grass rhizosphere (*Urochloa mosambicensis*) microbiome?



Location of Mthimkhulu Game Reserve in Limpopo Province, northeastern South Africa, including the positions of control and cut plots within the reserve (Aldworth et al., 2022)

Task:

Analyze phospholipid fatty acids (PLFA), a standard method in our laboratory, to identify functional microbial groups of bulk soil and *C. mopane* rhizosphere soil and identify shifts in the microbial community thereby differentiating rhizosphere from ecohydrological/shadowing impact (→ total of 18 samples for PLFA fingerprint analysis).

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