

MSC BURSARY

NRF – GLOBAL CHANGE, SOCIETY AND SUSTAINABILITY

Bursary: R 80 000 per annum.

Running grant: R 20 000 per annum.

MSc on ecophysiology of establishing *Acacia karroo* seedlings in an arid savanna

Background:

Bush encroachment is a serious problem in all savanna areas of South Africa reducing the carrying capacity of the land for grazing, decreasing stream flow and influencing earth atmospheric climate change feedback.

In mesic savanna fire plays an important role in suppressing the tree seedling growth and changes in climate, land-use and elevated atmospheric CO₂ have all been implicated in allowing seedlings to rapidly grow to heights that are not susceptible to fire. In arid savanna fire is infrequent and unlikely to play as an important role in tree seedling suppression. Here, it is more likely that seed recruitment and establishment are the processes that limit encroachment, although herbivory may play an important role in suppressing subsequent seedling growth. Hence, it is possible that recent woody encroachment is as a result of improved seedling recruitment and establishment as a result of disturbance, elevated CO₂, reduced wind run and greater water availability.

Hence, critical to understanding bush encroachment in arid savanna is to understand what limits seedling establishment and what are the mechanisms responsible for seedling mortality? This project will address this question using field measurements, field manipulations and green-house experiments.

The project will be based in the Eastern Cape and students must register at Rhodes University. For further details contact project supervisors Prof Brad Ripley (b.ripley@ru.ac.za) or Dr Adam West (adam.west@uct.ac.za).

Requirements:

Applicants must have a BSc Honours degree with a strong track record in Botany and a keen interest in ecology and/or ecophysiology. Funding is available to all South African nationals.

Applications:

Applications should reach Prof Brad Ripley by 10 Dec 2013. Applications should consist of a motivating letter outlining the suitability and interests of the applicant, the names of two referees, as well as a short C.V. and a copy of the student's academic record.