

PhD project: opportunity for a student

Forest-savanna boundary dynamics: what limits recruitment?

Background Forest-savanna boundaries worldwide are often remarkably stable. In the Northern Territory, small patches of monsoon rainforest are embedded in a vast matrix of mesic savanna dominated by eucalypt trees and grass. Savannas are more open and fire-prone, and may or may not present drier and less fertile soils. Savanna tree species seldom recruit into forests, and few forest tree species establish in savannas. It is not well understood why this is so, different responses to fire regimes, competition with savanna grasses, light conditions, seasonal drought and soil fertility being variously implicated. The response to contrasting conditions may be one of intolerance, or competitive exclusion may follow from limited tolerance.

Project aim: to identify the biological and ecological determinants of recruitment of monsoon rainforest and savanna trees at the forest-savanna boundary. Field transplant and “common garden” experiments will be used to investigate seedling survival. These will be supplemented with germination trials and field surveys. Contrasts will also be made within forest types – spring-fed moist *cf* seasonally dry monsoon forests. Potential study sites in the Darwin region have been identified.



Resources Some operating funds and the necessary equipment for measuring seedling traits and physiology are available. Successful application is conditional on obtaining an Australian or International postgraduate study award to cover living expenses.

Research supervisors Assoc. Prof. Mike Lawes (CDU), Assoc. Prof. Sam Setterfield (CDU), Dr Caroline Lehmann (CDU), Dr. Don Franklin (CDU)

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