

Great Western Woodland Supersite

Affiliated projects summary

Project title: Modelling tree growth in a semi-arid woodland ecosystem
Abstract: Objectives: (1) Set-up of ACi curves, N, P and LMA values for dominant species. (2) Establish the extent to which rates of light saturated photosynthesis, Vcmax and Jmax change in response to associated traits and to climatic moisture in the Great Western Woodlands. Experimental design and methods: In April 2013, we surveyed ACi curves and related leaf traits (area:mass ratios, and concentrations of nitrogen and phosphorus) in 11 representative trees and shrub species growing at the Great Western Woodlands TERN site. Leaves were sampled from different individuals ranging from 1 to 4 replicates per specie. Asat(light saturated photosynthesis), Amax (CO2 saturated photosynthesis), Ci (intercellular partial pressure of CO2) and Rlight(CO2 evolution from mitochondria in the light, other than that associated with the PCO cycle) were used to calculate rates of Vcmax (maximum velocity of the carboxylase) and Jmax (maximum rate of carboxylation allowed by the electron transport). Vcmax and Jmax were corrected for temperature. A second campaign will take place on September 2013. Expected project timeframe: From February 2012 to August 2015
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Associated parties/collaborators (others involved in the project) Name: Professor Owen Atkin Organisation: The Australian National University Address: Division of Plant Sciences, Research School of Biology, Building 46, ANU, Acton, ACT 0200 Phone: 02-6125 5046 Email: Owen.Atkin@anu.edu.au
Research Project (if part of a larger umbrella research project) Title: Understanding the contribution of leaf respiration to the leaf carbon balance of tropical trees
Funding sources: JCU/TERN (funded travel, accommodation and equipment hire) ARC DP09 grant (DP0986823) <i>Out of the darkness: predicting rates of respiration of illuminated leaves along nutrient gradients.</i> Macquarie University iMQRES (Macquarie University scholarship grant to Henrique Furstenau Togashi)
Datasets being used or collected: ACi curves, Leaf Area, C13 isotopes, leaf N, leaf P, Leaf dry mass
Geographic coverage of study: Great Western Woodland TERN supersite