Great Western Woodland Supersite

Affiliated projects summary

Date: April/September 2013

Project title: Terrestrial Ecosystem Research Network (TERN) – Australian Supersites

Abstract:
This study is one part of the Plant Physiology component of the TERN Supersite campaigns. Two campaigns (April to September 2013) at the GWW site will allow comparisons across seasons within the Great Western Woodlands and with sister campaigns at other supersites across Australia. Focusing on leaf carbon exchange (photosynthesis and respiration) and plant water relations, the aim of the study is to characterise the functional diversity of species present in the plant community at the GWW supersite. Focus has been placed on sampling dominant species that account for > 80% of the biomass.

Expected project timeframe: 2 years

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Research Project (if part of a larger umbrella research project)
Title: Australian Supersites Network as part of TERN
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Funding sources:
ARC, TERN supplemental Funding Grant: “Ecophysiological measurements: the missing link between vegetation modelling, biodiversity and ecosystem function”.

Datasets being used or collected:
For the dominant plant species, replicated measures of:

- Light and CO_2 saturated rates of leaf photosynthesis, accompanying rates of dark respiration;
- Pressure-Volume and Percentage Loss Conductivity curves. Pre-dawn and midday water potentials;
- CO_2 response curves (A-C_i curves);
- Short-term temperature dependence of leaf dark respiration;
- Nutrient, protein and carbohydrate assays on the measured leaves;
- Leaf area-mass relationships.

Geographic coverage of study:
Selected plants (trees and shrubs) grow in the catchment area for the flux tower and generally within a radius of 1 km.