

Data summary: Leaf moisture content and spectral reflectance measurements

Leaf moisture content

In total, 57 leaf samples were collected from the canopy for analysis to determine leaf moisture content. Branches were destructively harvested from a total of 22 trees using a line thrower (Table 1). Two or three leaf samples each containing 5 individual leaves from a single branch were collected from each tree depending on the amount of material harvested.

Table 1: Leaf moisture content samples obtained.

Plot	Number of trees sampled	Number of species samples	Total number of samples
Kara01	7	?	18
Kara05	7	?	20
Gold0101 (BFP)	8	6	20

Each sample was immediately placed in a sealed bag and stored inside a cooler with ice. Wet leaf weight was then determined by weighing the sealed bags on the same day as sampling and deducting dry bag weight. Leaf samples were scanned and then oven dried at 60° for 48 hours, before re-weighing to obtain dry weight. Total leaf area of the samples was determined using a semi-automated routine in ImageJ software. Equivalent water thickness (g cm^{-2}), fuel moisture content (g g^{-1}) and specific leaf area ($\text{cm}^2 \text{g}^{-1}$) were then calculated for all samples. Figure 1 shows the variability of leaf EWT across the plots.

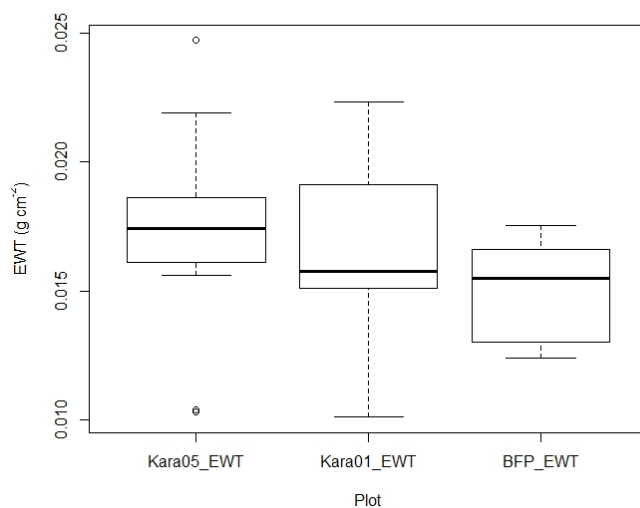


Figure 1: Leaf Equivalent Water Thickness (EWT) variability between plots.

Individual leaf areas

In addition to obtaining total leaf area of the samples for EWT estimation, the individual one-sided surface area was determined (again using ImageJ) for all leaves that were separable from their

neighbours in the scans. 90 individual leaf areas are available from plot Gold0101 (BFP), 82 from plot Kara01 and 89 from plot Kara05, across a range of overstorey species (Figure 2).

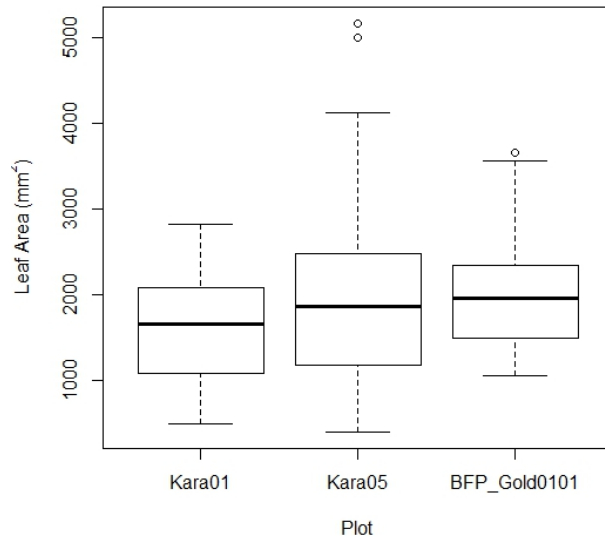


Figure 2: Individual leaf areas (in mm²).

Destructive LAI sampling

A voxel of canopy in BFP (Gold0101), from a Northern Grey Ironbark (*Eucalyptus siderophloia*), was destructively sampled, following scanning from multiple angles, for estimation of leaf area index. All leaves within the voxel were removed and total leaf area is being determined. The voxel size was approximately 2 cubic meters. Spectral measurements of leaf reflectance and transmittance were also made (see below).

Field spectral data

Spectral reflectance and leaf transmittance measurements were obtained from canopy leaf samples and tree bark using an ASD contact probe (bark) and leaf clip. A summary of the data collected is in Table 2. Measurements of reflectance were made of both the upper and lower leaf surfaces. The range of species covered is still being determined.

Plot	# Trees (leaf reflectance)	# samples /tree (leaf reflectance)	# Trees (leaf transmittance)	# Samples / tree (leaf transmittance)	# Trees (bark reflectance)	# Samples / tree (bark reflectance)
Kara01	5	4-14	5	4-14	0	0
Kara05	8 ^a	3	0	0	8	3
Gold0101 (BFP)	8	10	8	10 ^b	17	5

^a Includes one understorey acacia

^b from upper surface only

Additionally, leaf reflectance (upper surface) and transmittance measurements were made of 46 leaf samples from the destructively sampled LAI tree in Gold0101.