



Interception processes and rates on vegetation in a major urban area: metropolitan Melbourne, Australia.

David Dunkerley

Monash University, Building 11, Clayton Campus, School of Geography and Environmental Science, Melbourne, Australia
(david.dunkerley@arts.monash.edu.au)

Interception processes have been widely studied in tropical and temperate forest environments, in the canopies of certain crop plants, in some desert plant communities, and in stone veneers on the soil surface. Much less is known about interception processes and rates in urban environments, where the local and microclimatic conditions can depart significantly from those of non-urban locations. Given that canopy interception involves the advection of energy to support ongoing intra-storm evaporation, it seems likely that urban forests and gardens may experience larger advected energy fluxes from the warm urban atmosphere, and hence, higher overall interception losses from wet canopy evaporation. This paper will present the results of a canopy interception loss study carried out in the grounds of the Royal Botanic Gardens of Melbourne, located near the centre of this major city. Five sets of throughfall troughs were established beneath the taxonomically diverse plantings in the garden. The troughs each carried 12 m of collecting gutter leading to a central tipping bucket mechanism with event logger. A pluviograph station was operated in the open about 150 m away. Results gathered over several years of monitoring suggest that event-based interception losses are large, commonly in the range 60-80% of the incident rainfall. Detailed event-based data will be presented and their implications explored.