

2014 Distinguished Lecturer Series



Professor Derek Eamus:

Groundwater-dependent ecosystems: key questions, new methods and a response curve



Groundwater-dependent ecosystems (GDEs) are a valuable resource, having economic, biological, conservation, ecosystem services and aesthetic values. However, global-change type droughts and associated woodland and forest mortality represents a new threat to both groundwater resources and GDEs. Three challenges are faced by resource managers tasked with protecting both groundwater supplies and the ecosystems that rely on groundwater. These challenges are: where are GDEs located in a landscape? How much water does a GDEs use? What is the response function of GDEs to groundwater extraction?

This talk will examine trends in global drought and forest mortality and the application of remote sensing techniques to address the first two questions. It will also summarise the results of a recent comparative study of leaf, whole tree and canopy woodland ecophysiology along a pronounced depth-to-groundwater gradient that has generated an ecosystem-scale response function to differences in depth-to-groundwater.

About Derek

Professor Derek Eamus was appointed to the Chair of Environmental Sciences in 2000 at the University of Technology, Sydney, aged 40. He has spent more than 22 years studying the ecophysiology of savannas, arid-zone woodlands and temperate woodlands in Australia, including work in the NT, NSW and SA, and has significantly advanced knowledge in plant physiology and ecophysiology. In 2010, he won both the Vice-Chancellor's Medal for Research Excellence and the Chancellor's Medal for Research Leadership – the first year that these awards were offered. He was awarded a prestigious Senior Research Fellowship by the Australian Land and Water Authority in 2009. He currently leads the Terrestrial Ecohydrology Research Group at UTS.

Derek previously worked at the Northern Territory University, 1990 – 1999 (now Charles Darwin University). He has published 174 journal papers and 10 book chapters with more than 5,200 citations.

Prof. Eamus was the lead-author of the textbook *Ecohydrology: vegetation function, water and resource management*, published in 2006 by CSIRO Press. He is currently co-writing a textbook that integrates plant ecophysiology, remote sensing and modelling of terrestrial landscapes, to be published in late 2014 by Cambridge University Press.

Tuesday 6 May, 5:30pm for a 6:00pm start

JACOBS (formerly known as SKM)
Level 16, 452 Flinders St
(enter via Custom House Lane)
Melbourne VIC 3000

This event is free of charge.

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