



Monash Weather and Climate seminar series

Next seminar: Friday 25th September

CO₂, water vapour and energy exchange in northern New Zealand peat wetlands—an Australian connection

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In this seminar I will describe some of the research we have carried out in peat wetlands in northern New Zealand, where we have used micrometeorological and hydrological techniques to determine critical ecosystem functions of the dominant vegetation associations.

Peatlands in NZ are unusual in a global context because the dominant peat-forming plants belong to the vascular family Restionaceae. Globally, temperate zone and high latitude peatlands are usually dominated by mosses. The main NZ peat-former is *Empodisma minus*, common name jointed wire rush, which also occurs in the alpine regions of South Eastern Australia. *E. minus* dominates peatlands at mid-successional stage, from fen (mesotrophic) to bog (oligotrophic) transitions.

Wetland vegetation canopies dominated by *E. minus* have unusually low evaporation rates and large Bowen ratios, especially considering the ready availability of water within the peat substrate. It is thought that this highly conservative water use is a critical property that has allowed extensive peatlands to form in the seasonally dry northern NZ climate zone. CO₂ exchange is characterised by a dynamic photoinhibition that leads to low levels of net ecosystem exchange during bright sunlit conditions. The seasonal pattern of CO₂ exchange shows unusually little variation but with generally higher rates of net uptake in winter.

Seminars held in Room 345, Building 28, Fridays 1-2pm

All Welcome!

For more information, contact Laura Davies
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