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20 Mar 2023
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(Paris Time)

Salle 201, Bâtiment PS2, CIRAD-UMR AMAP, Boulevard de la Lironde, Montpellier

Zoom : <https://umontpellier-fr.zoom.us/j/98597348737>

Plants under global change: death, survival, and climate moderation

presented by

Gunnar Keppel

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ABSTRACT

This seminar looks at two case studies around the theme of plants in a changing climate. The first looks at dieback in a *Eucalyptus* population persisting in an isolated Pleistocene refugium. Monitoring >400 trees through two successive droughts, revealed a reduction of 40% in the number and biomass of trees, and that remaining trees have reduced health. The main drivers of dieback changed from environmental variables indicative of marginal growing conditions to those indicative of elevated heat stress. Overall, ecosystem decline was evident but low mortality and regeneration were observed on pole-facing slopes. This suggests that while future 'climate change type droughts' will further decimate the studied population, there is persistence in small pockets with more favourable conditions. This highlights the importance and limitations of refugia for facilitating the persistence of biodiversity under climate change. The second study investigates the importance of cavities created by dead leaves in moderating heatwaves, potentially providing important refuges for wildlife. The cavity-forming South Australian grass tree, *Xanthorrhoea semiplana*, reduced average maximum (day-time) temperatures by >5°C and increased average minimum (night-time) temperatures by > 1.5°C. Grass tree cavities hence provided more stable microclimatic conditions that are potentially important for the persistence of wildlife. This capacity to buffer extreme weather conditions was enhanced by denser canopy cover, highlighting the importance of maintaining high-quality forest ecosystems.

KEY WORDS Climate Change; Dieback; Heat Stress, Microclimate; Refugia

Invited and animated by:

Dr. Thomas Ibanez (UMR AMAP)

Type:

Research results

Oral language:

English

Language of PPT:

English

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