Do Arbuscular Mycorrhizal Fungi help grasses in heatwaves?

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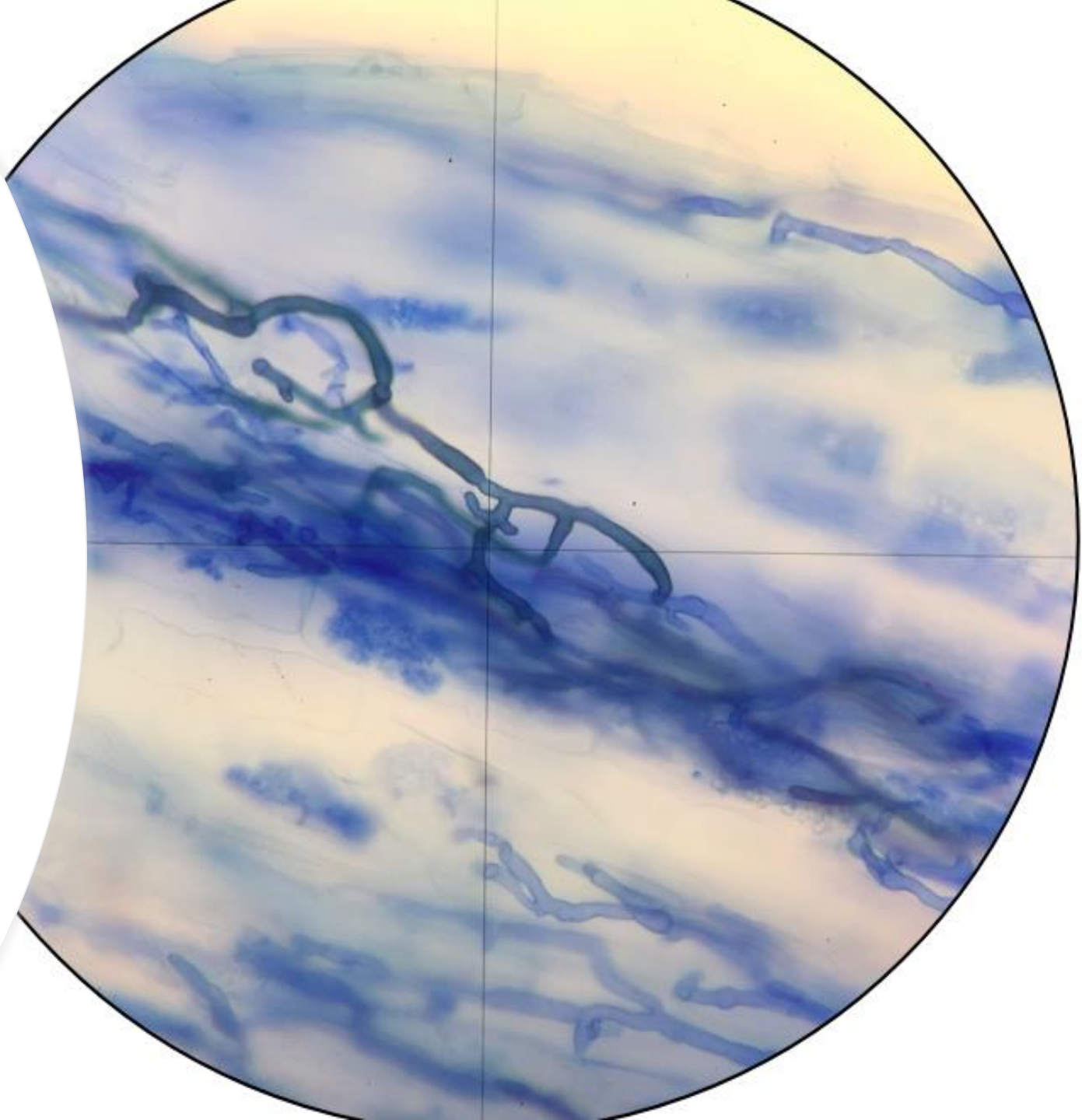
Arbuscular Mycorrhizal Fungi

- Arbuscular mycorrhizal fungi - AMF
- Symbiotic fungi which colonise plant roots
- Benefits to both fungi and plant
- AMF improves plant tolerance to stress
- Common in grasses



Australian Grasslands

- Vegetation communities dominated by grasses
- Diverse flora and fauna
- Critically Endangered - less than 1% of native grassland remains in good condition
- Major threats include – Agricultural use, urban development and climate change
- Public concern focussed on other communities, i.e. rainforests, bushland, etc.

Threats climate change poses on Grasslands

- Limited tree coverage = higher level of direct heat
- Grasslands can exist in regions of already high temperatures and low rainfall = already at their ecological limits
- Wildfire risk greatest for grasslands
- Higher incidence of extreme climate – heatwaves and droughts

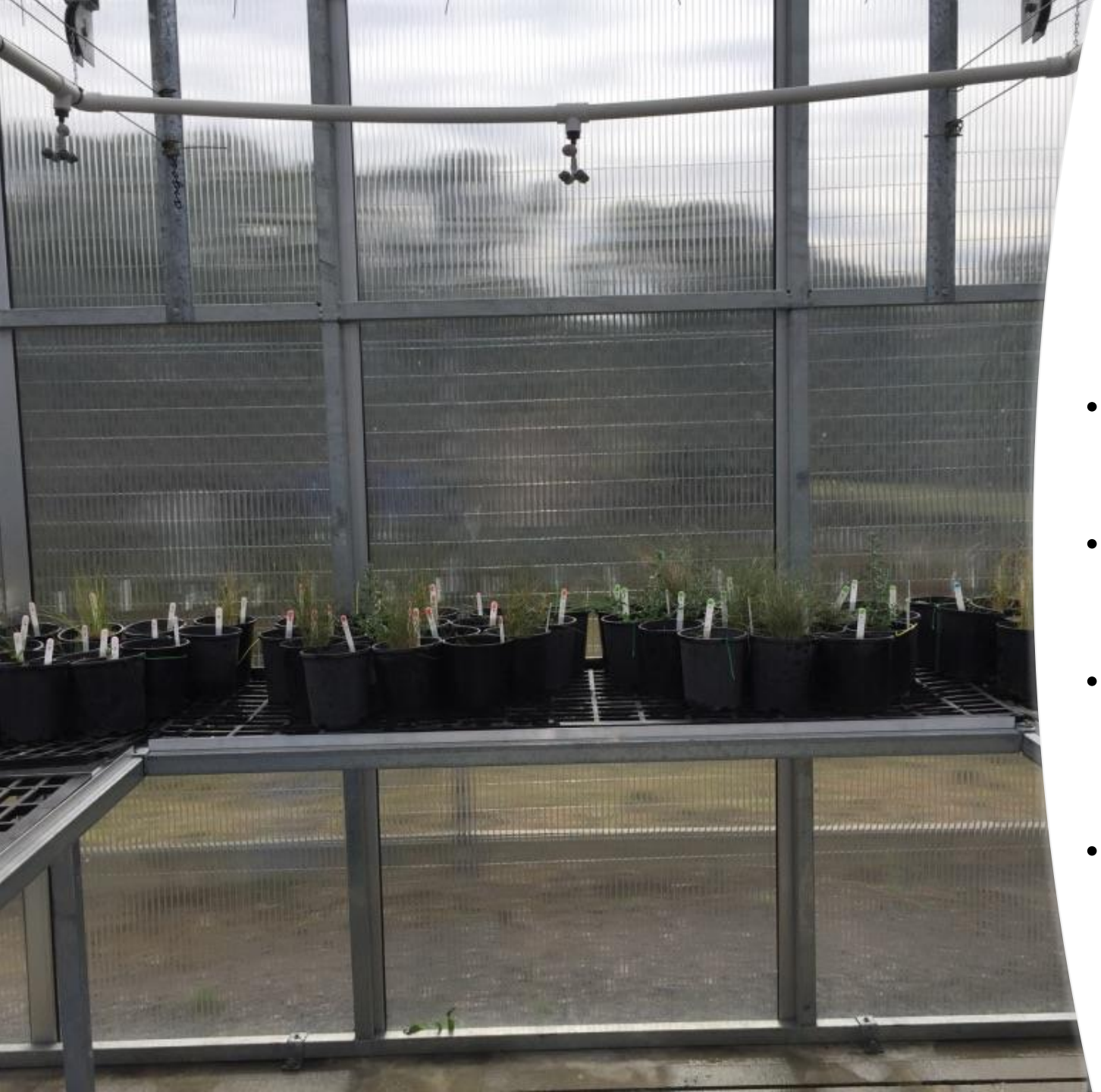
Heatwaves and drought

- Combined heatwave and drought events present unique challenges for plants

- AMF may help plants use water more efficiently and could improve water scavenging capabilities

Project Aims

- Heat and water stress experiments
- Native grass species grown with and without AMF
- Understand how AMF may modify plant water use and uptake
- AMF may help plants use water more efficiently and could improve water scavenging capabilities
- Stable carbon isotope analysis – Gives a measure of plant water use



Project Summary

- Australian grasslands are under appreciated and are critically endangered
- AMF could improve grassland survival during extreme stress
- Knowledge of how AMF facilitate grassland species during stress events can be used to predict changes in grassland ecosystems
- Informing grassland management, ecosystem restoration and having broad agricultural applications

Thank you for listening!

Friends of Grasslands

Australian Wildlife Society
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