



**PYTHIACEOUS FINE FEEDER ROOT PATHOGENS ASSOCIATED WITH
EUCALYPTUS GOMPHOCEPHALA
(TUART) DECLINE IN SOUTH-WEST WESTERN AUSTRALIA**

Peter M. Scott^{1,2}, Bryan L. Shearer³, Paul A. Barber^{1,2} and Giles E. Hardy^{1,2}

¹Centre of Phytophthora Science and Management, School of Biological Science and Biotechnology, Murdoch University, Murdoch, Western Australia 6150, Australia

²Tuart Health Research Group, School of Biological Science and Biotechnology, Murdoch University, Murdoch, Western Australia 6150, Australia

³Science Division, Department of Environment and Conservation, Locked Bag 104, Bentley Delivery Centre, WA 6983, Australia.

Eucalyptus gomphocephala is a keystone canopy species endemic to a narrow (5-10 km wide) coastal strip approximately 300 km in length in south-west Western Australia.

E. gomphocephala is undergoing a significant decline that was first identified as a spot decline in 1994 and now occurs throughout large sections of its remnant distribution within Yalgorup National Park, in some areas resulting in 100% mortality. Multiple factors, including soil-borne pathogens, have been identified as possibly contributing to the decline. Less fine roots are associated with trees on declining sites compared to those on healthy sites. Foliar analysis indicates that declining trees have lower concentrations of some micronutrients, including zinc, which uptake is typically impaired by fine feeder root loss. A range of Pythiaceus microorganisms have been isolated from declining roots and these may be contributing to the loss of fine roots. Glasshouse trials are currently underway to determine whether these isolates are indeed pathogenic.