

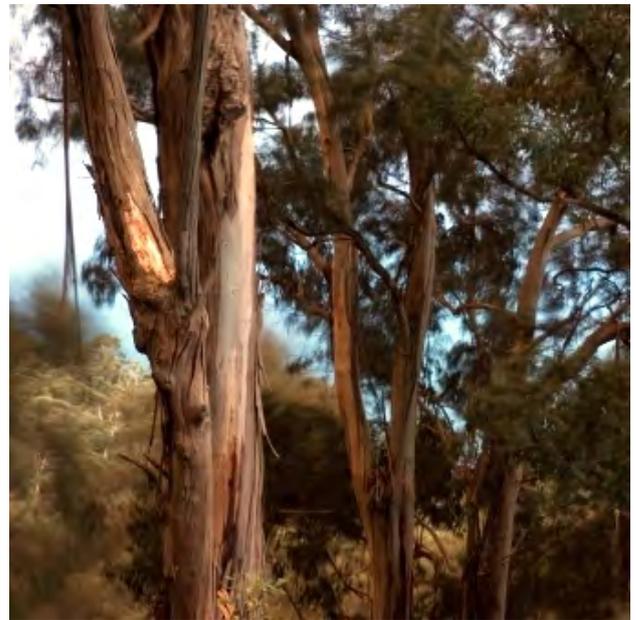
# RESEARCH DIRECTIONS

## Restoring Cumberland Plain Woodland

Associate Professor Charles Morris from the School of Science and Health together with Dr Paul Gibson-Roy from Greening Australia has been awarded a UWS Research Partnership grant to evaluate two approaches to develop a tool box of effective restoration methods at a former Cumberland Plain Woodland site that can be tailored to individual sites.

'The native vegetation of the Cumberland Plain bore the brunt of land clearing for agricultural purposes from the earliest days of settlement, and is now reduced to only remnants, many of which are small in size', says Associate Professor Morris. 'Restoration of native ground-layer vegetation of grassy woodlands on land formerly used for agriculture faces the problems of limited recruitment in situ due to a dense sward of exotic grasses, a large burden of weed seed, and limited quantities of native seed. Residually high levels of soil nutrients, particularly nitrate, also favour growth of weeds. Topsoil removal and sowing with native seed has been shown to be effective in overcoming these problems in Victoria; in NSW, fire and/or slashing, combined with seed addition, and soil carbon addition to reduce nitrate, have also been used.'

The research team will test the following: the removal of the top soil; biomass removal by fire and/or by spraying with herbicide and slashing; nutrient manipulation by carbon addition (differing rates); and biodiversity enhancement through seed addition. To assess the effectiveness of the soil carbon treatments at reducing nutrient levels, probes will be used to measure the flux of nitrate, ammonium and phosphate ions in the soil prior to, and after treatments.



The findings from this study if successful will suggest that the restoration of the Cumberland Plain woodland is possible and that nutrient reduction and seed addition are critical to positive outcomes.

**Project Title:** Overcoming barriers to restoring Cumberland Plain Woodland: a comparison of methods

**Funding has been set at:** \$7,876

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