

Mapping The Warrens Of Southern Hairy-nosed Wombats (*Lasiorhinus Latifrons*) Using Ground Penetrating Radar (Gpr): An Effective Tool To Assist Wildlife Managers

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The southern hairy-nosed wombat (*Lasiorhinus latifrons*) is a nocturnal and fossorial herbivorous marsupial native to southern Australia, and is one of the largest burrowing animals in the world. Although its distribution has declined substantially since the European settlement of Australia, it is now experiencing a population recovery. Whilst the population is still highly fragmented, wombats can now be found in locations where they have not been seen for over 50 years. This has caused a dichotomy for wildlife managers. In some locations the wombat population is still highly fragile and requires protection. In other locations the resurgence in numbers has brought wombats into conflict with farmers, as their burrowing activities can cause significant damage to agricultural land and infrastructure. Proper management to alleviate these conservation and control concerns requires a detailed understanding of wombat population dynamics.

We used Ground Penetrating Radar (GPR) to map the underground morphology of wombat warrens in several locations across South Australia in order to better understand how local conditions might affect warren type and local area abundance. Our findings suggest that warren size and type can vary significantly depending upon soil substrate, and this has caused a rethink in how we calculate wombat abundance. The results from this project are now being used to develop a species distribution model which can be used to better manage the wombat population. This will provide an important tool to alleviate the concerns of both conservations and farmers in regards to the long term viability of the wombat population and the protection of agricultural land.