Royal Zoological Society of New South Wales

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# Paddy Pallin Research Grant

## The contribution of mycophagous mammals to ecosystem function and restoration


### Deakin University

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### Project Summary


Fungus-feeding mammals alter ecosystems through digging. By digging they improve soil health, provide habitat for other species, and spread seed and fungal spores. Fungi help plants access nutrients and water. However, our knowledge of how these mammals influence plants through spreading fungal spores is limited.

Digging mammals were once common across Australia, however, with the introduction of feral cats and red foxes many have greatly reduced in geographical range, population size or been driven to extinction. Exploring interactions between mammals, fungi and plants will help us understand how to conserve and restore the health of ecosystems, and hence, aid biodiversity conservation.

My project has two parts. Part one is an experiment that explores the role of fungus-feeding mammals in the establishment of fungi on plant roots. Seedlings will be grown in a glasshouse to compare how the addition of mammal scat, containing fungi, impacts seedling growth. Part two will explore associations between fungus-feeding mammals and fungal communities. Eastern barred bandicoot scat will be collected from inside and outside their historic range. Fungi within the scat will then be identified using DNA analysis and compared. These findings will provide valuable information for land managers to inform restoration and conservation projects.


### Biography of Aviya Naccarella

Aviya is an ecologist with an interest in ecosystem processes. Her research is cross-disciplinary, and her passion lies in bringing together researchers, land managers and communities to work towards common conservation goals. Aviya's PhD at Deakin University focuses on understanding ecological interactions between mammals, plants, and fungi. Her research explores how we apply this knowledge to conservation projects aimed at restoring ecosystem function.