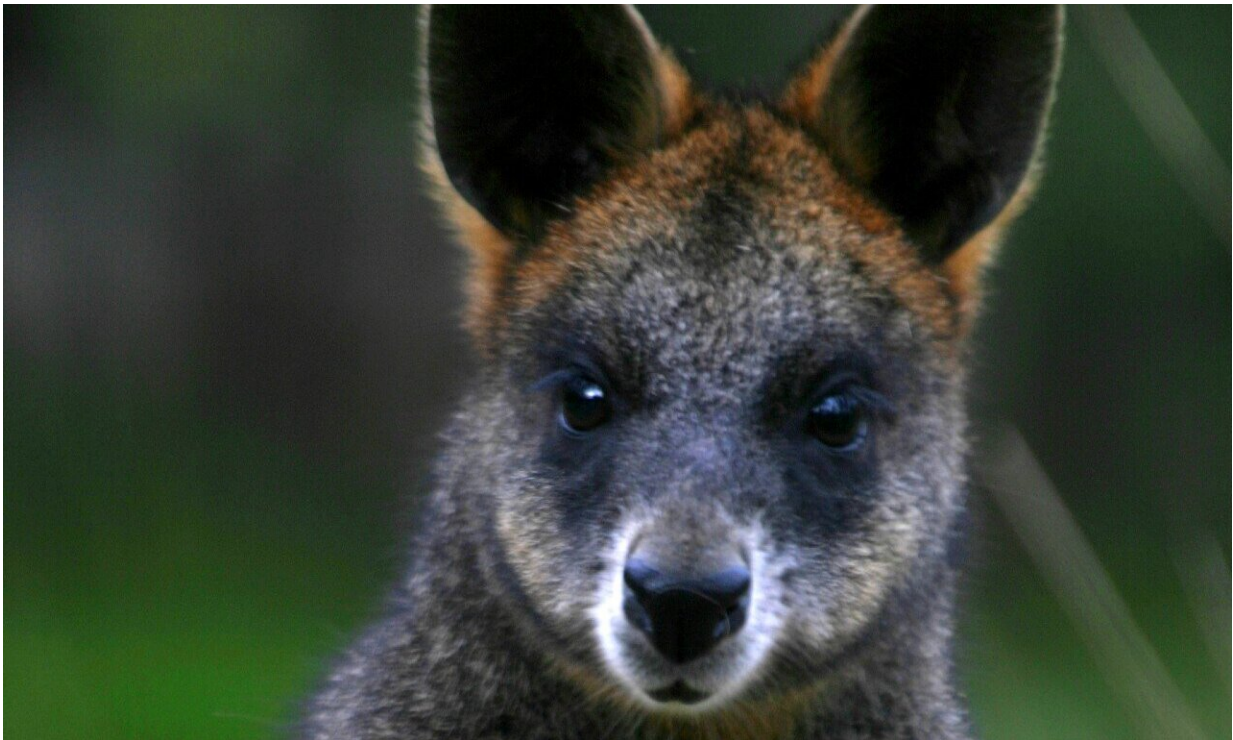


Truffle munching wallabies shed new light on forest conservation

November 16 2020



Credit: Todd F Elliott

Feeding truffles to wallabies may sound like a madcap whim of the jet-setting elite, but it may give researchers clues to preserving remnant forest systems.

Edith Cowan University researcher Dr. Melissa Danks led an

investigation into how swamp wallabies spread [truffle spores](#) around the environment, and results demonstrate the importance of these animals to the survival of the [forest](#).

"There are thousands of truffle species in Australia and they play a critical role in helping our trees and [woody plants](#) to survive," she said.

"Truffles live in a mutually beneficial relationship with these plants, helping them to uptake water and nutrients and defense against disease. Unlike mushrooms where spores are dispersed through wind and water from their caps, truffles are found underground with the spores inside an enclosed ball—they need to be eaten by an animal to move their spores."

Dr. Danks and colleagues at the University of New England investigated the role of swamp wallabies in dispersing these spores.

"Wallabies are browsing animals that will munch on ferns and leaves as well as a wide array of mushrooms and truffles," she said.

"This has helped them to be more resilient to changes in the environment than smaller mammals with specialist diets like potoroos. We were interested in finding out whether swamp wallabies have become increasingly important in truffle dispersal with the loss of these other mammals."

Conservation by poo tracking

The team fed truffles to wallabies and timed how long it would take for the spores to appear in the animals' poo. Most spores appeared within 51 hours, with some taking up to three days.

Armed with this information, the researchers attached temporary GPS trackers to wallabies to map how far they move over a three-day period.

Results showed the wallabies could move hundreds of meters, and occasionally more than 1200 meters, from the original truffle source before the spores appeared in their poo, which makes them a very effective at dispersing truffles around the forest.

Dr. Danks said this research had wide ranging conservation implications for Australian forests.

"As forest systems become more fragmented and increasingly under pressure, understanding spore dispersal systems is really key to forest survival," Dr. Danks said.

"Many of our bushland plants have a partnership with truffles for survival and so it is really critical to understand the role of [animals](#) in dispersing these truffle spores. Our research on swamp [wallabies](#) has demonstrated a simple method to predict how far an animal disperses fungal spores in a variety of landscapes."

"Modeling mycorrhizal fungi dispersal by the mycophagous [swamp wallaby](#) (*Wallabia bicolor*)" is published in *Ecology and Evolution*.

More information: Melissa A. Danks et al. Modeling mycorrhizal fungi dispersal by the mycophagous swamp wallaby (*Wallabia bicolor*), *Ecology and Evolution* (2020). [DOI: 10.1002/ece3.6873](https://doi.org/10.1002/ece3.6873)

Provided by Edith Cowan University

Citation: Truffle munching wallabies shed new light on forest conservation (2020, November 16) retrieved 21 June 2024 from <https://phys.org/news/2020-11-truffle-munching-wallabies-forest.html>

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