



2022

# Paddy Pallin Research Grant

## Animal dispersal in a fragmented landscape: causes, costs, and consequences for conservation

### Monash University

Niki Teunissen  
Supervisor: Prof Anne Peters

### Project Summary

The movement of animals from their origin to a new home (“dispersal”) is crucial for populations to stay connected and species to persist. Habitat is however becoming increasingly fragmented and degraded, creating barriers for individuals trying to move through the landscape. Understanding when and where to animals move, and how successful ones that move are, is critical for effective conservation. Yet, it is difficult to follow individuals, especially if they travel far, and it is often impossible to identify individuals that try to leave but die or return home, and to track success after dispersal. This project will overcome these challenges using purple-crowned fairy-wrens, a well-studied endangered bird in the remote Kimberley region of northwest Australia, as a model. By combining detailed observations to measure birds’ success with state-of-the-art tracking technologies to find dispersers on a landscape scale, we can detect all dispersal attempts - successful and unsuccessful. This project will reveal why birds stay or (attempt to) leave, how costly it is to move, and how it affects lifetime success. By relating this to distance travelled and habitat, this research provides information to help manage species in fragmented landscapes and provides immediate conservation benefits for an endangered bird by allowing land managers to directly incorporate outcomes in current conservation efforts.

### Biography of Niki Teunissen

My research combines intense field work with detailed observations and experiments on marked individuals followed throughout their life, to answer questions relating to behaviour, ecology and conservation. I have been researching the social system and ecology of purple-crowned fairy-wrens at AWC’s Mornington Wildlife Sanctuary in the Kimberley since 2014. During my PhD at Monash University, my research focused on why fairy-wrens live and cooperate together in social groups, and particularly how the benefits of cooperation and group living might depend on social context. Following my PhD, I continued working with purple-crowned fairy-wrens but this time shifting my research to a conservation focus, investigating environmental impacts on breeding success and survival. My current research at Wageningen University and Monash University explores why animals disperse or stay, and how we can promote successful animal movement in fragmented habitat.