



2023

Paddy Pallin Science Grant

Improving predator management by understanding predator use of prey odours

University of Sydney

Shanaz Masani

Supervisors: Prof Peter Banks and Dr Catherine Price

Project Summary

Populations of Australia's threatened birds have, on average, halved since 1985, with severe reductions in shorebird populations. Nest predation by invasive mammalian predators, such as the European red fox (*Vulpes vulpes*), is a major cause of population declines, and nesting colony failures can often be attributed to a single fox. Lethal predator control is often impractical or ineffective and so new approaches are urgently needed.

Olfactory misinformation is an innovative technique which decreases the conspicuousness of prey to predators. Recent work in New Zealand has shown that pre-exposing predators that hunt by smell to unrewarding prey odour (e.g., nesting odours) before the prey are present, (e.g., before nesting season), leads them to habituate to the prey odours. Once prey appears in the system, predators are no longer motivated to follow the preys' odour cues, increasing prey survival.

This project aims to test whether olfactory misinformation can be used at nesting sites of ground-nesting shorebirds in Australia to reduce nest predation by foxes. This will help generate guidelines so olfactory misinformation can be rolled out as a common conservation management tool, creating a refuge for vulnerable prey during critical life periods such as nesting season.

As invasive predators persist and ground-nesting shorebird populations continue to decline, in Australia and globally, olfactory misinformation is a new, non-lethal approach to tackling an old conservation problem.

Biography of Shanaz Masani

I am conducting my PhD with the Behavioural Ecology and Conservation Research Group at the University of Sydney, looking into improving predator management by understanding how predators use prey odour cues to hunt. I completed an Integrated Masters in Biological Sciences at the University of Birmingham (UK). I was then awarded the Northcote Postgraduate Scholarship, administered through the Britain-Australia Society, which provided me with full funding to move to Australia and complete my PhD as an international student from the UK. My research aims to fill gaps in our knowledge which not only improve our understanding of behavioural ecology but also, importantly, have broad applications to improve conservation management.