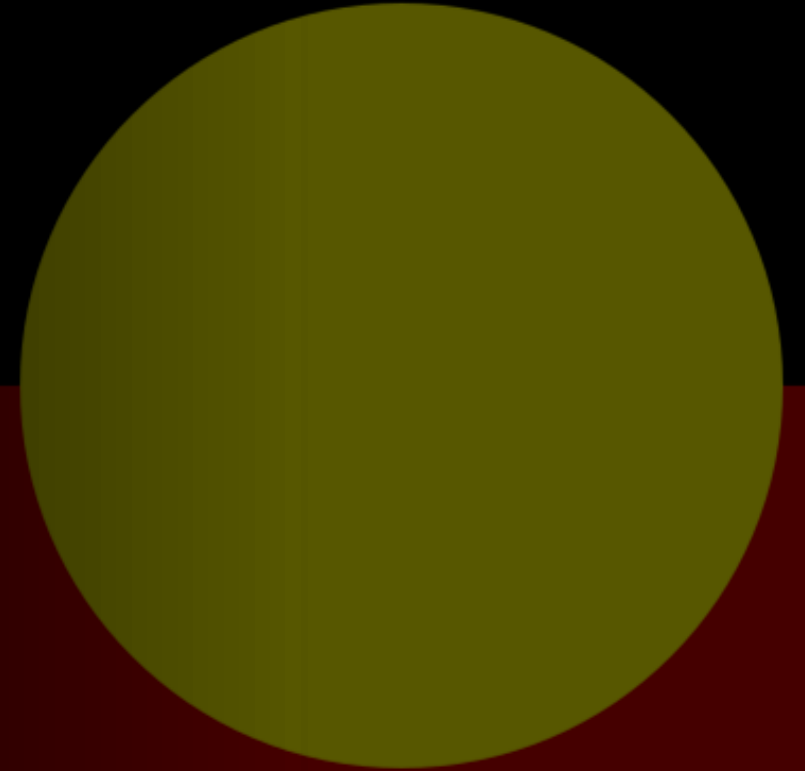


The use of artificial refuges by small vertebrates after prescribed fire

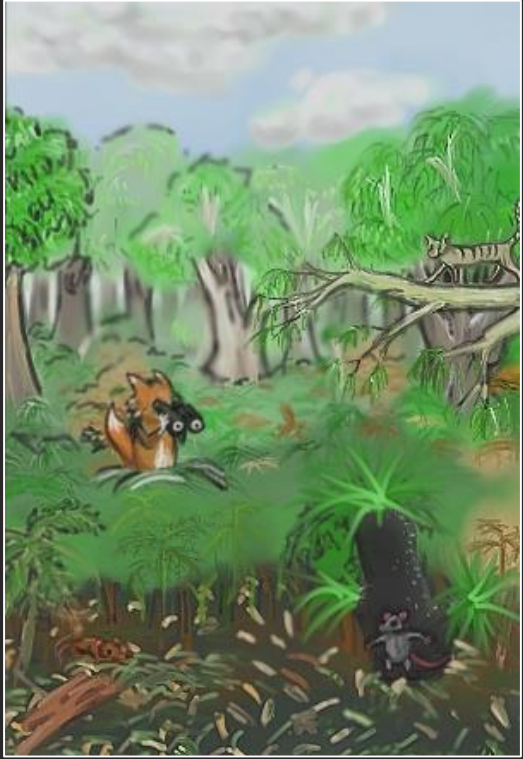
Darcy Watchorn, Barbara Wilson, Mark Garkaklis, Don Driscoll, Tim Doherty



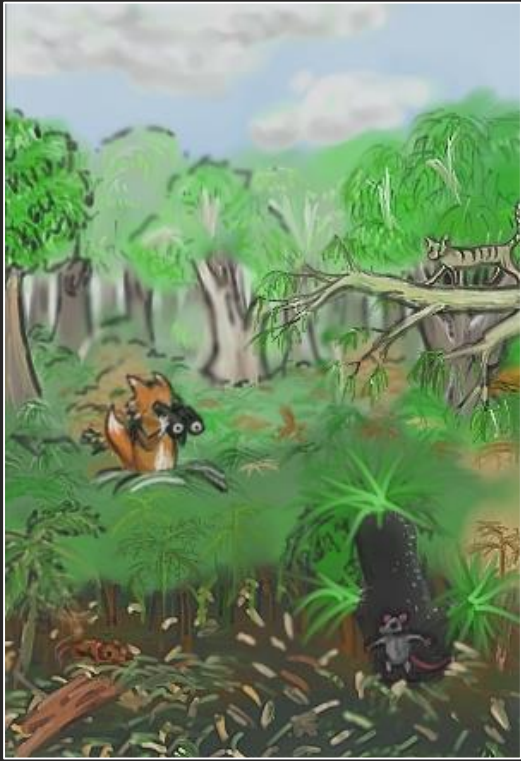
This work was
conducted on the
unceded lands of
the Wathaurong and
Eastern Maar People



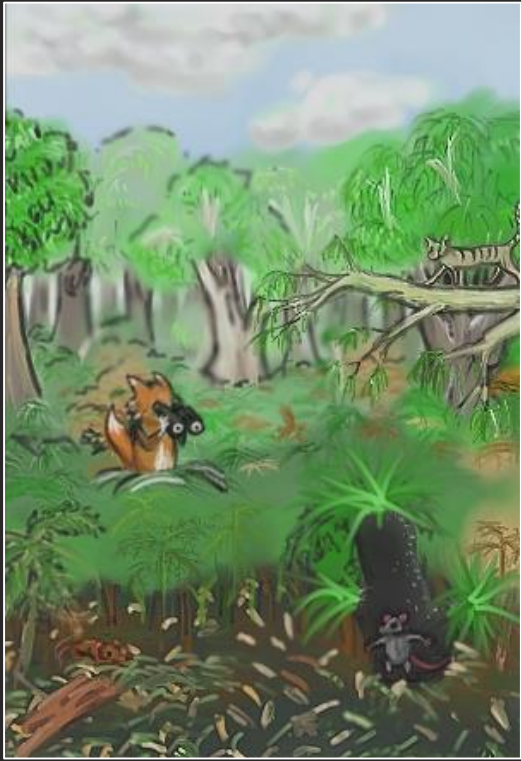
Cats, foxes, and fire



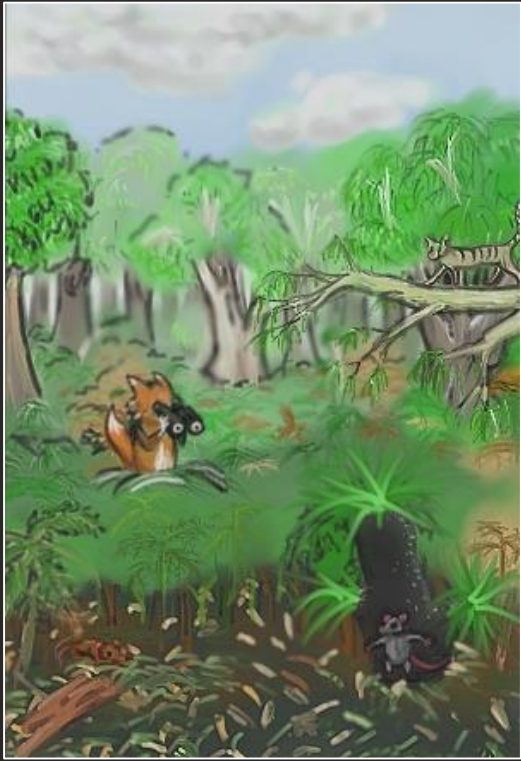
Cats, foxes, and fire



Cats, foxes, and fire



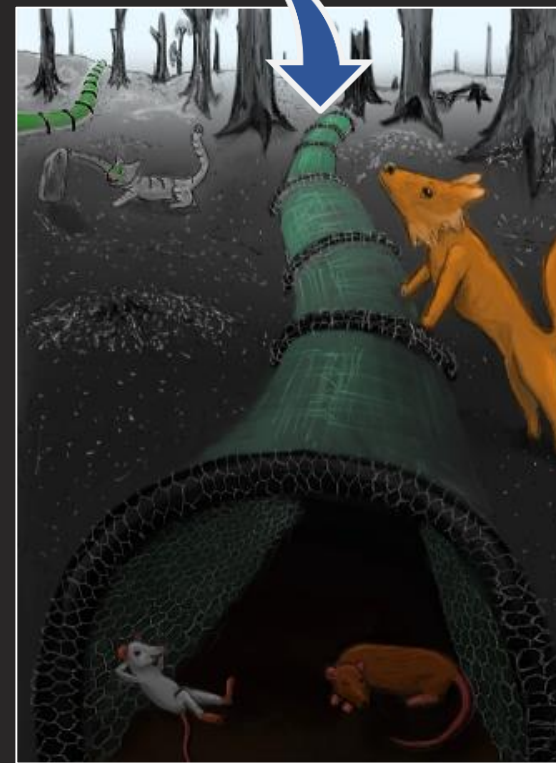
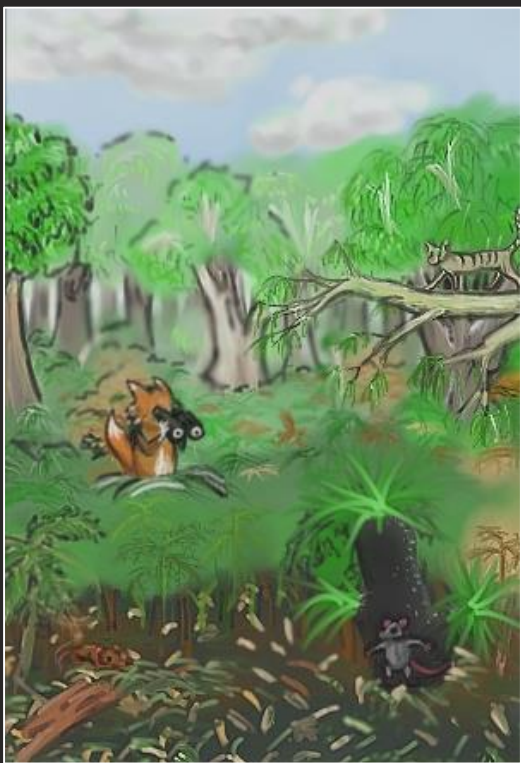
Cats, foxes, and fire



Management options

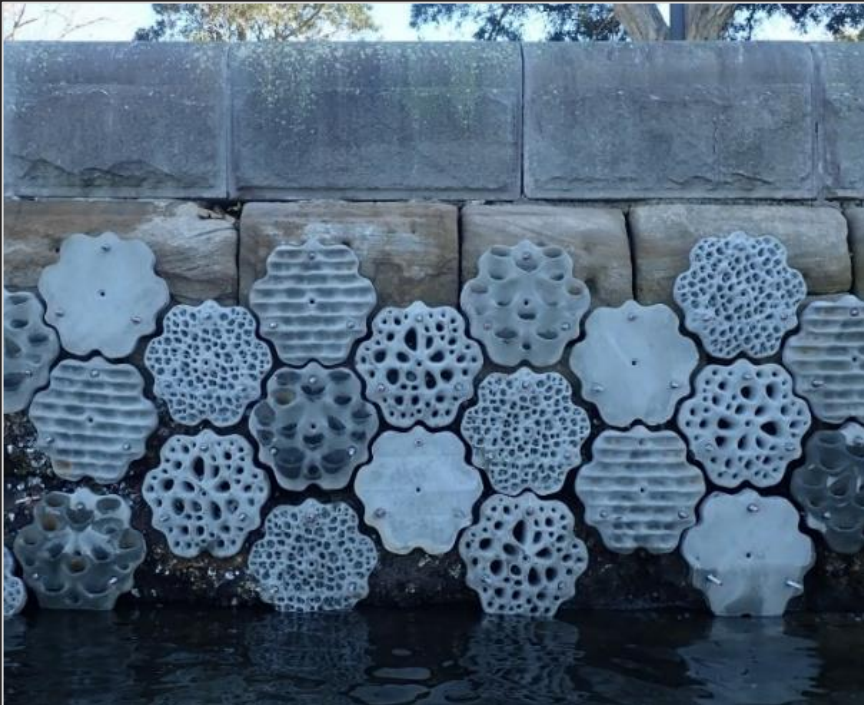
- Lethal control
- Preservation of natural refuges

Cats, foxes, and fire



Artwork by: Demeke Durant, Sidney Byron Kerr, Molli McGaw, Danish Zulishman, Mitchell Kornberg (2020), SLE200-Communicating Science Idea at Deakin University

What are artificial refuges?



Artificial rocky crevices for marine fauna



Artificial rocks for reptiles



Artificial tree hollows for possums

What are artificial refuges?

BIOLOGICAL
REVIEWS



Cambridge
Philosophical Society

Original Article

Artificial refuges for wildlife conservation: what is the state of the science?

Mitchell A. Cowan ✉, Michael N. Callan, Maggie J. Watson, David M. Watson, Tim S. Doherty, Damian R. Michael, Judy A. Dunlop, James M. Turner, Harry A. Moore, Darcy J. Watchorn, Dale G. Nimmo

FRONTIERS IN ECOLOGY *and the* ENVIRONMENT

Reviews | [Open Access](#) |  

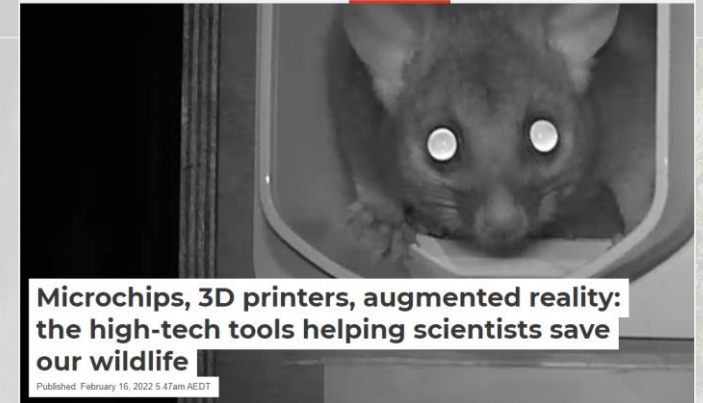
Artificial habitat structures for animal conservation: design and implementation, risks and opportunities

Darcy J Watchorn ✉, Mitchell A Cowan, Don A Driscoll, Dale G Nimmo, Kita R Ashman, Mark J Garkaklis, Barbara A Wilson, Tim S Doherty

THE CONVERSATION

Academic rigour, journalistic fair

Arts + Culture Books + Ideas Business + Economy Education **Environment + Energy** Health Politics + Society Science + Technology



Microchips, 3D printers, augmented reality: the high-tech tools helping scientists save our wildlife

Published: February 16, 2022 5:47am AEDT

THE CONVERSATION

Academic rigour, journalistic fair

Arts + Culture Books + Ideas Business + Economy Education **Environment + Energy** Health Politics + Society Science + Technology



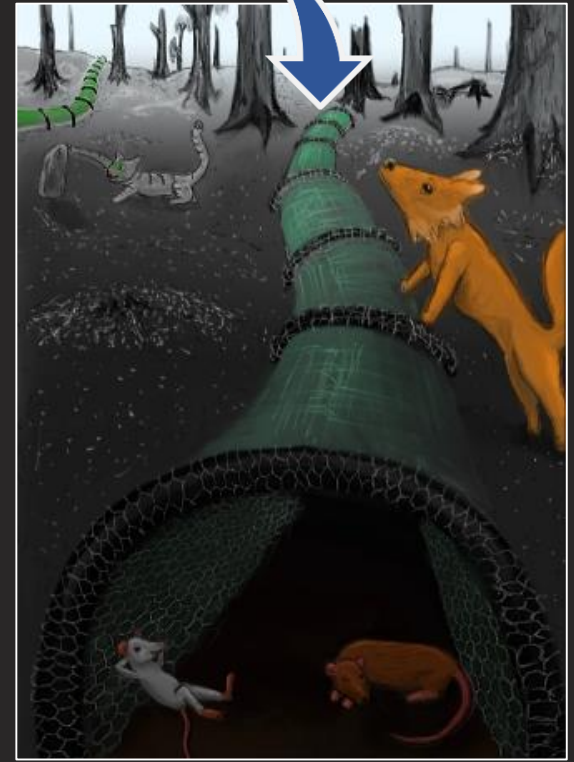
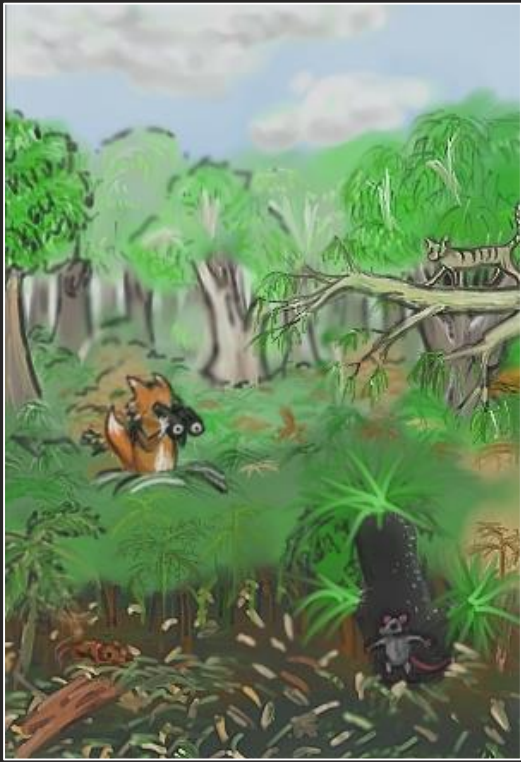
Artificial refuges are a popular stopgap for habitat destruction, but the science isn't up to scratch

Published: July 28, 2021 5:54am AEST

What do my artificial refuges look like?



Cats, foxes, and fire



Artificial refuge

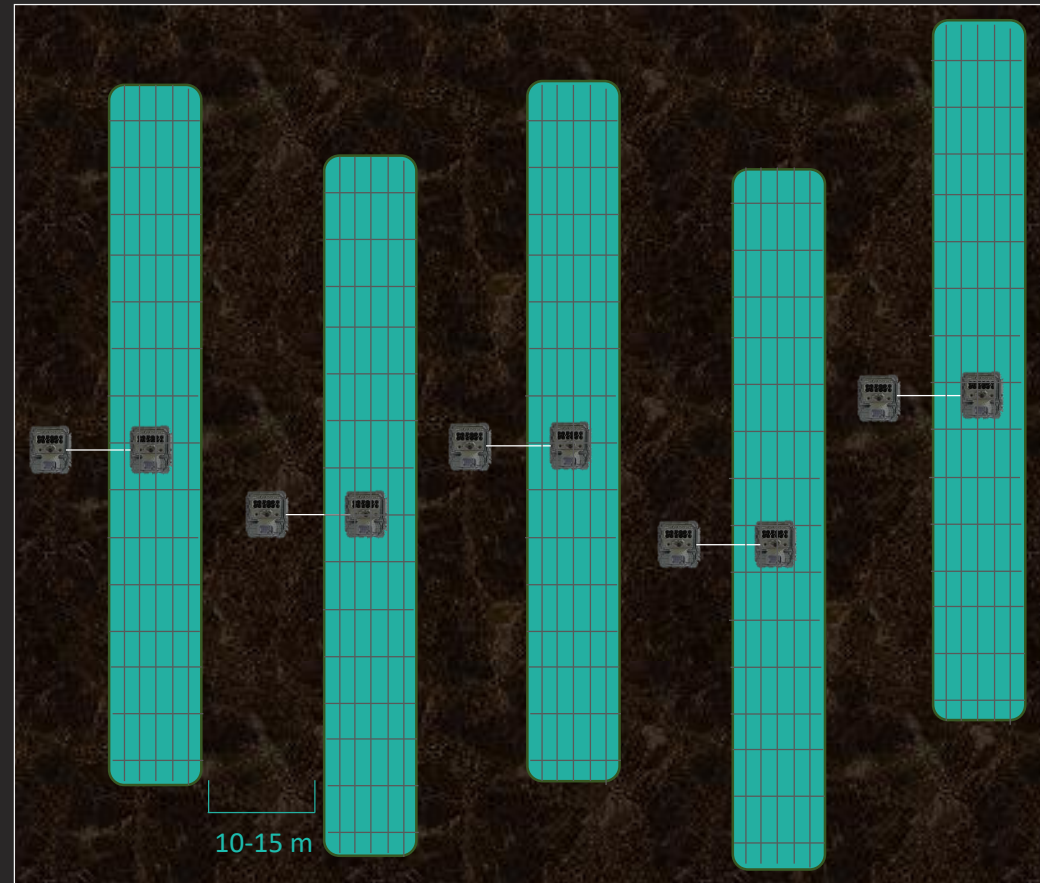
Artwork by: Demeke Durant, Sidney Byron Kerr, Mollie McGaw, Danish Zulishman, Mitchell Kornberg (2020), SLE200-Communicating Science Idea at Deakin University

Which small vertebrates use the artificial refuges?

Study design



Otway Ranges, Victoria



Example study site - five refuge tunnels per site



Cameras deployed for 12 months

Study design



Pre-fire



2 weeks post-fire



6 months post-fire



12 months post-fire

Agile antechinus



White-footed dunnart



White-browed scrubwren



Superb fairywren



Painted buttonquail



Preliminary results

Agile antechinus



White-footed dunnart



White-browed scrubwren



Superb fairywren



Painted buttonquail



Preliminary results

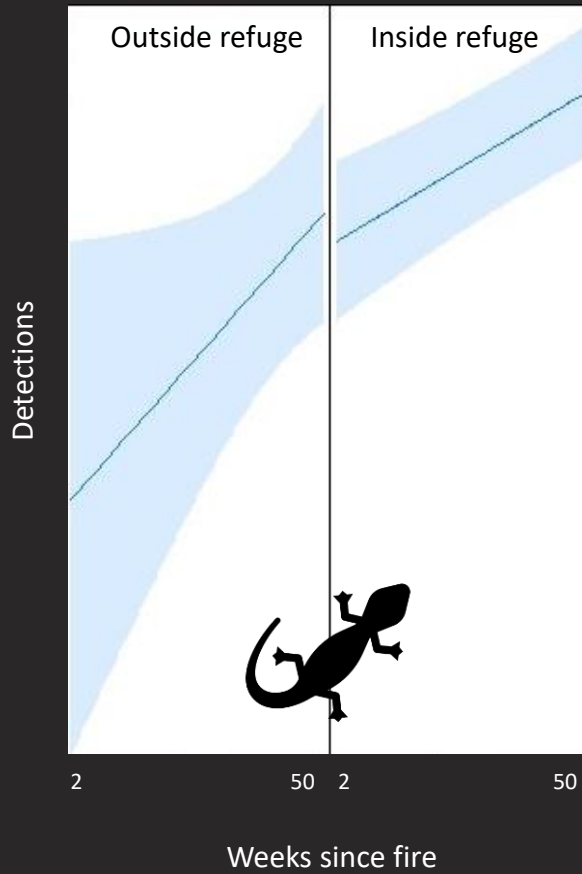
Detections inside

- Mammals = 367, 7 species
- Birds = 929, 13 species
- Reptiles = 49, 4 species
- Total detections = 1,345 (66%)

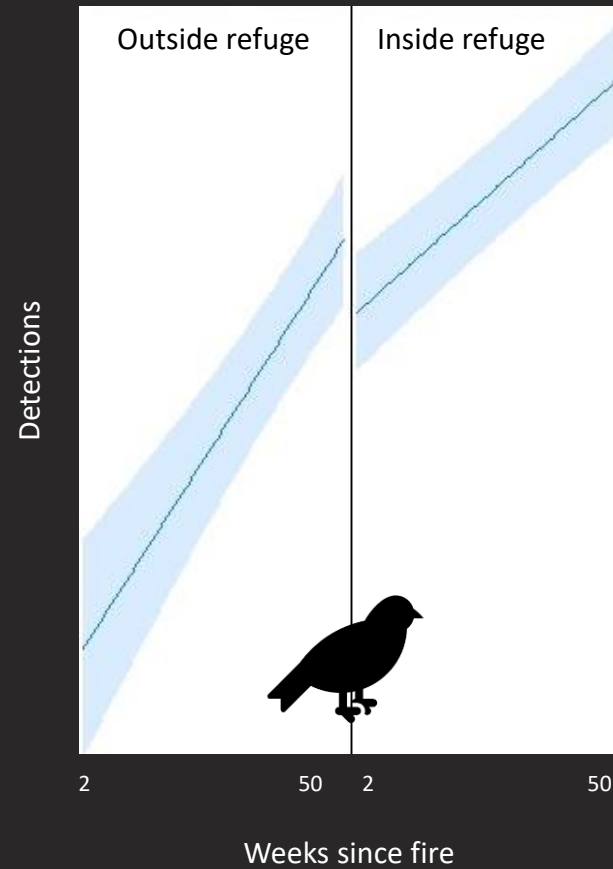
Detections outside

- Mammals = 268, 5 species
- Birds = 387, 13 species
- Reptiles = 7, 2 species
- Total detections = 662 (33%)

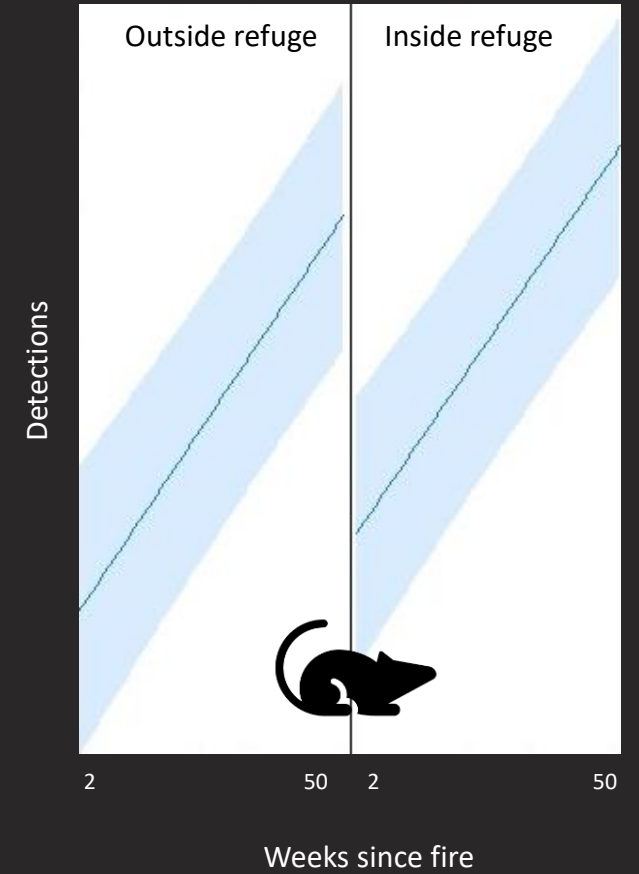
All reptiles



White-browed scrubwren



All small mammals



Time since fire **P = 0.04**

P = <0.001

P = <0.001

Cam placement
(inside/outside) **P = 0.01**

P = <0.001

P = 0.432

Summary

Used preferentially by:

1. skinks
2. white-browed scrubwrens
3. fairy wrens
4. buttonquails

Not preferred by mammals

Summary

Used preferentially by:

1. skinks
2. white-browed scrubwrens
3. fairy wrens
4. buttonquails

Not preferred by mammals

But, did the refuges improve the persistence of small mammals?

Summary

Used preferentially by:

1. skinks
2. white-browed scrubwrens
3. fairy wrens
4. buttonquails

Not preferred by mammals

But, did the refuges improve the persistence of small mammals?



Doesn't look like it at this stage

Summary

Used preferentially by:

1. skinks
2. white-browed scrubwrens
3. fairy wrens
4. buttonquails

Not preferred by mammals

But, did the refuges improve the persistence of small mammals?



Doesn't look like it at this stage

Project contributors



Environment,
Land, Water
and Planning

