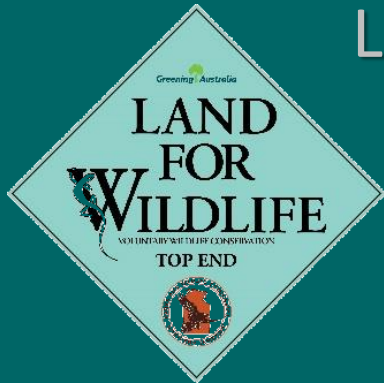


# Using nest boxes for threatened arboreal mammals in the NT

Emma Lupin

Leigh-Ann Woolley



# Collaboration

- Land for Wildlife – Top End
- Research Institute for the Environment & Livelihoods (RIEL) – Charles Darwin University





# Mammal decline in the N.T.

6 species declined dramatically



Brush-tailed  
rabbit-rat



Black-footed tree-rat



Northern brushtail possum



Golden-backed tree-rat



Northern brush-tailed phascogale



Northern quoll

# Cobourg research



## Nest boxes

Are they a viable option for threatened species management in NT tropical savanna?





# Cobourg research



# Nest box use?





# Which species?



Savanna glider  
*Petaurus breviceps ariel*



Black-footed tree-rat  
*Mesembriomys  
gouldii*



Brush-tailed rabbit-rat  
*Conilurus penicillatus*

# Cameras







Northern brushtail possum  
*Trichosurus vulpecula arnhemensis*



Black-footed tree-rat  
*Mesembriomys gouldii gouldii*



Brush-tailed rabbit-rat  
*Conilurus penicillatus*

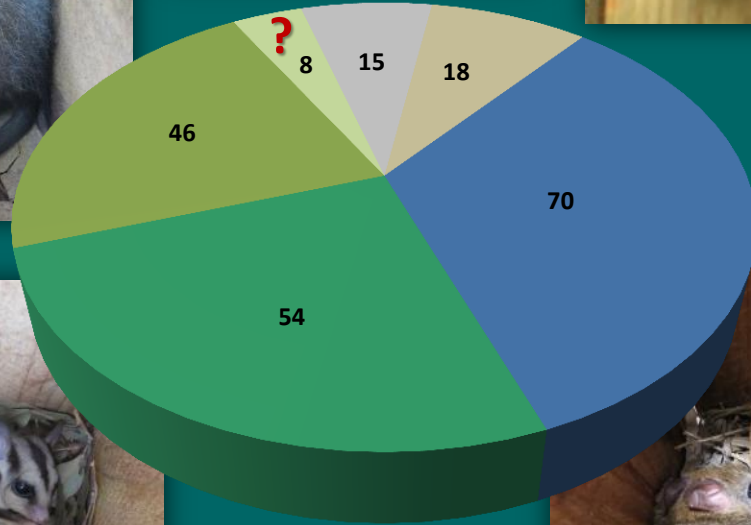


Savanna glider  
*Petaurus breviceps ariel*



# Nest box use

- 42% used after 1 year
- 60% used after 2 years
- 71% used after 3 years







# When to use nest boxes

- “Good habitat” for nest boxes:
  - intact savanna, a few big eucs with hollows, understory grass and shrubs
- Nest boxes at ~5m on one of biggest eucs
- South-facing

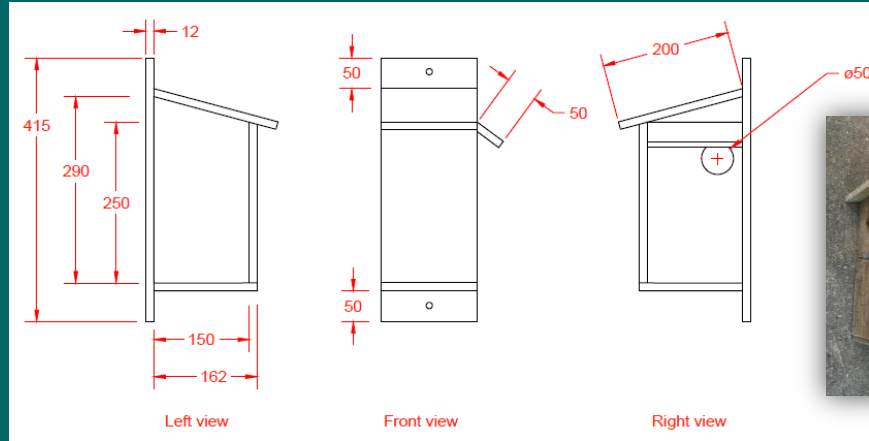




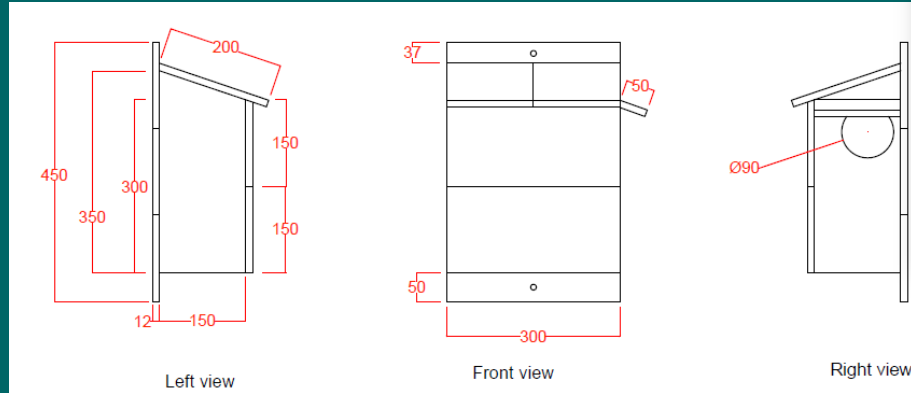
# Nest box design



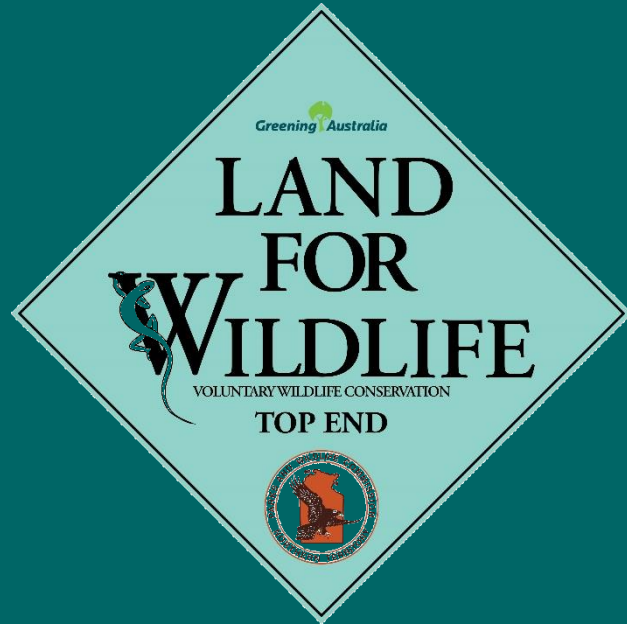
## Small nestbox



## Large nestbox



# Land For Wildlife - Citizen science



Land for wildlife is a voluntary conservation program supporting landholders to provide wildlife habitat through nature conservation and land management and promoting wildlife education and awareness



# What is Land for Wildlife?

- Top End - 250 member properties ( Darwin to Katherine)
- Over 8000 Hectares
- Workshops and events
- Land management advice and support



# What is the Citizen science project ?





# Black-footed Tree-rat focus

- *Mesembriomys gouldii*
- Threatened species
- Declined 30 % in 10 years
- Strong hold in Darwin region



# Revegetation plantings

- 19,000 Trees with 20 MT program
- Rehabilitating previously cleared land
- On 32 properties
- At 4 schools





# Revegetation plantings



# Nest boxes and enhance plantings

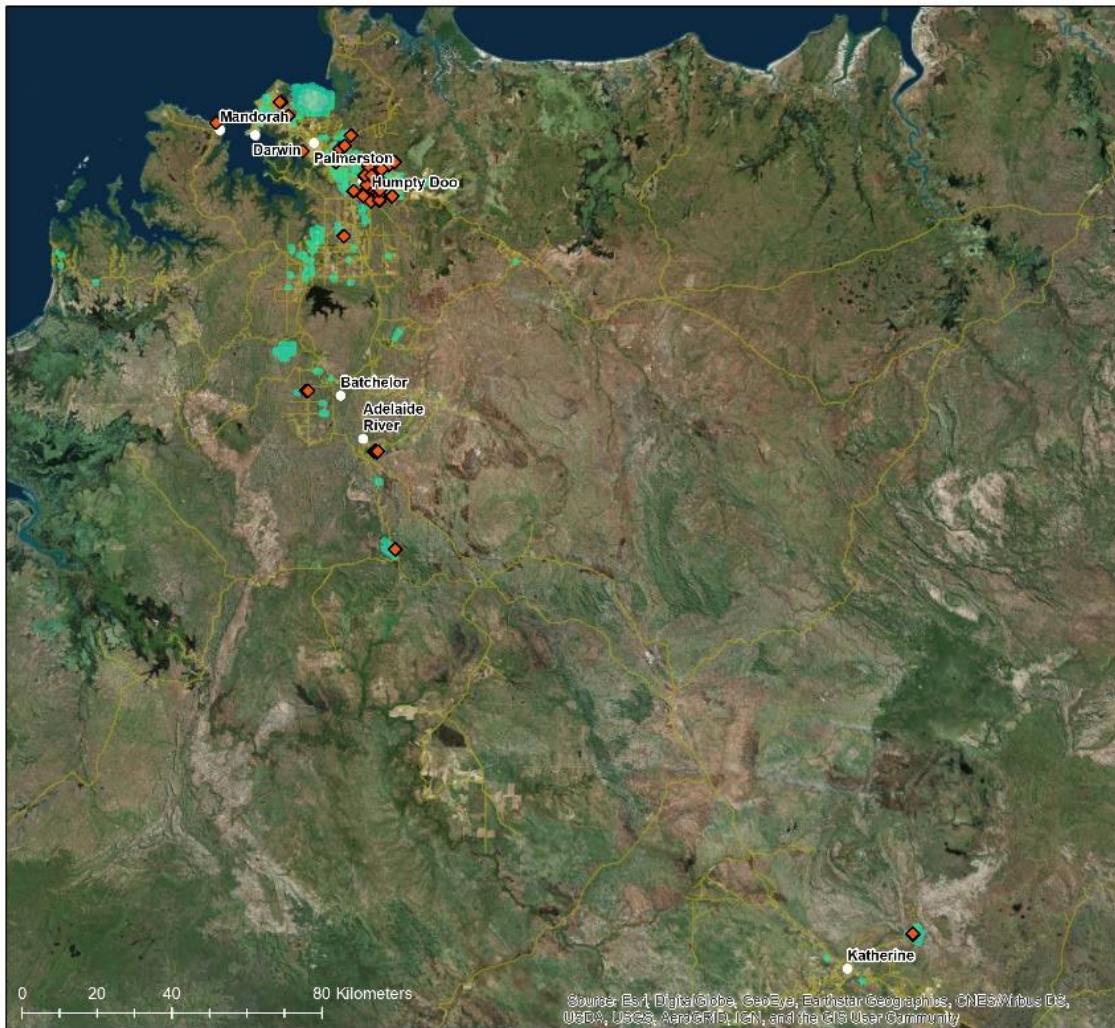
- 180 nest boxes (150 first year)
- Liaised with RIEL and other scientists for design and advice
- 38 properties
- 1500 plants
- TNRM funding
- Checked twice







# Nest box workshop

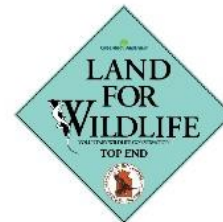




## Land for Wildlife Properties and Nest Box installation. July 2018

### Legend

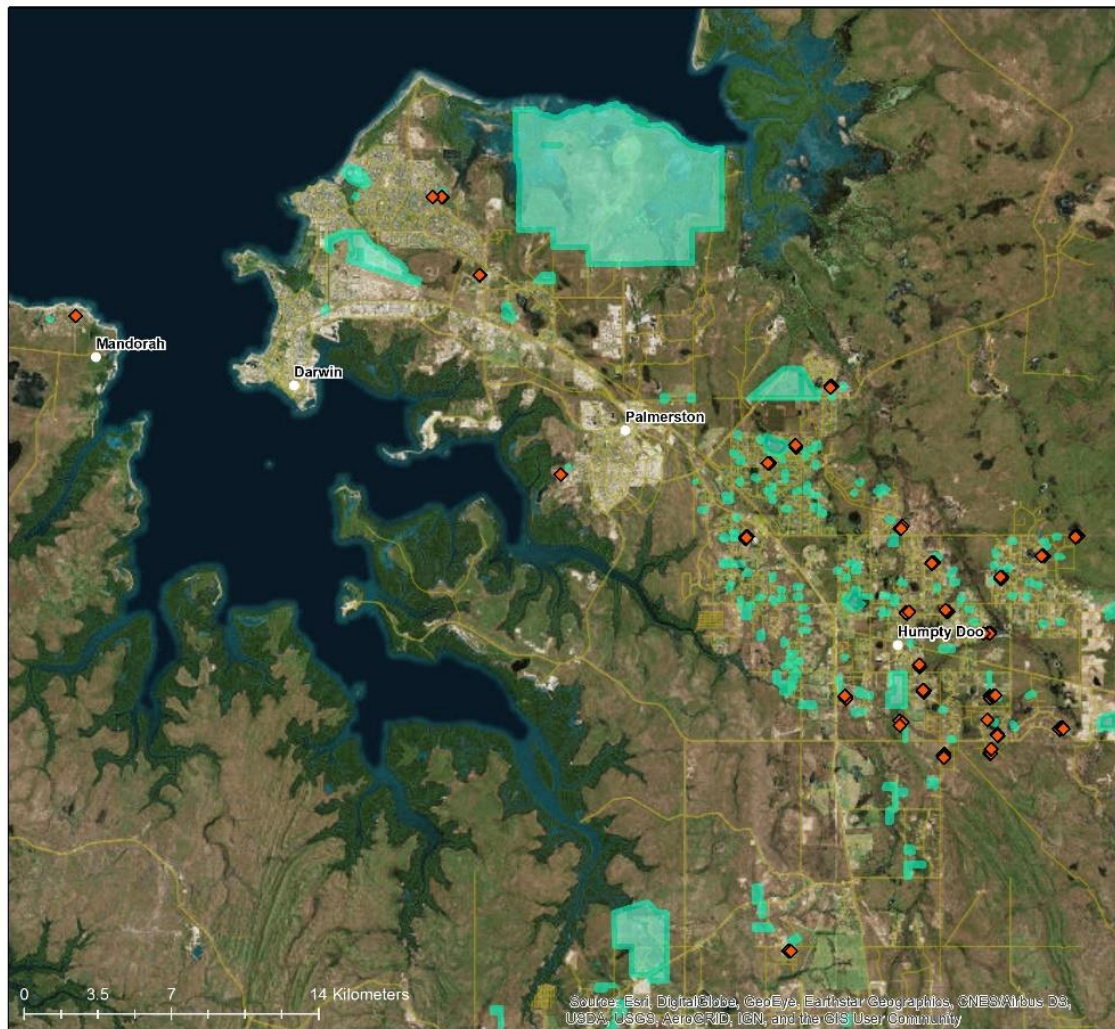
-  Nest Box locations
-  Land for Wildlife Properties



Datum: GDA 1994  
 Data source: Northern Territory Government and Greening Australia  
 Greening Australia gives no warranty regarding the Data's accuracy, completeness, currency or suitability for any particular purpose.  
 Date: 5/5/18 Author: Emma Lupin





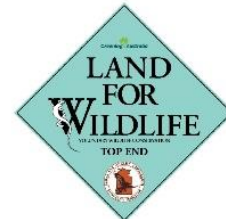




## Land for Wildlife Properties and Nest Box installation. Darwin region July 2018

### Legend

-  Nest Box locations
-  Land for Wildlife Properties



Datum: GDA 1994  
 Data source: Northern Territory Government and  
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 the Data's accuracy, completeness, currency or  
 suitability for any particular purpose.  
 Date: 12/9/18 Author: Emma Lupin



# Nest boxes checks





# Nest boxes checks

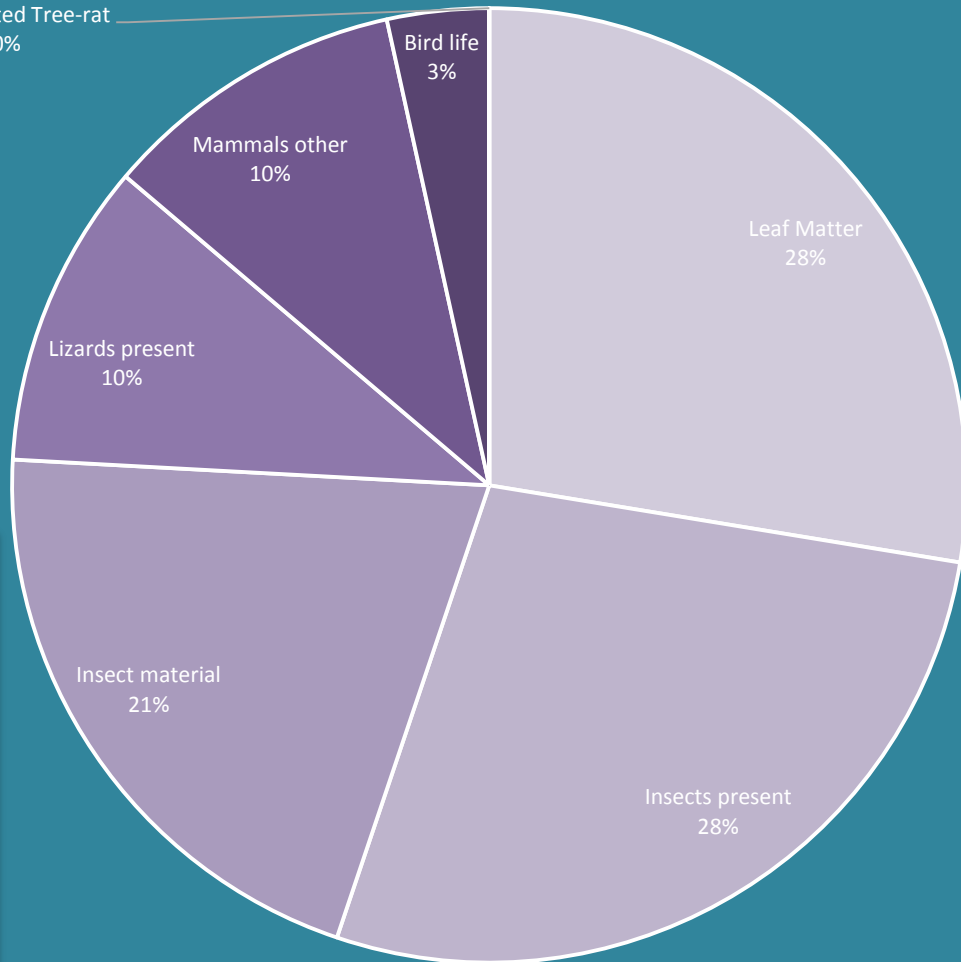
- Checked after 4 months and 12 months – 33% used
- (Sep 2017, April 2018)
- As many properties as possible
- With landholders/ students/ Green Army



# Nest boxes check results

Combination of 2 checks

Results of presence





# Nest boxes and motion sensing cameras

- Limitations with pole camera
- Grant to purchase motion sensing cameras plus funds
- 18 motion sensing cameras

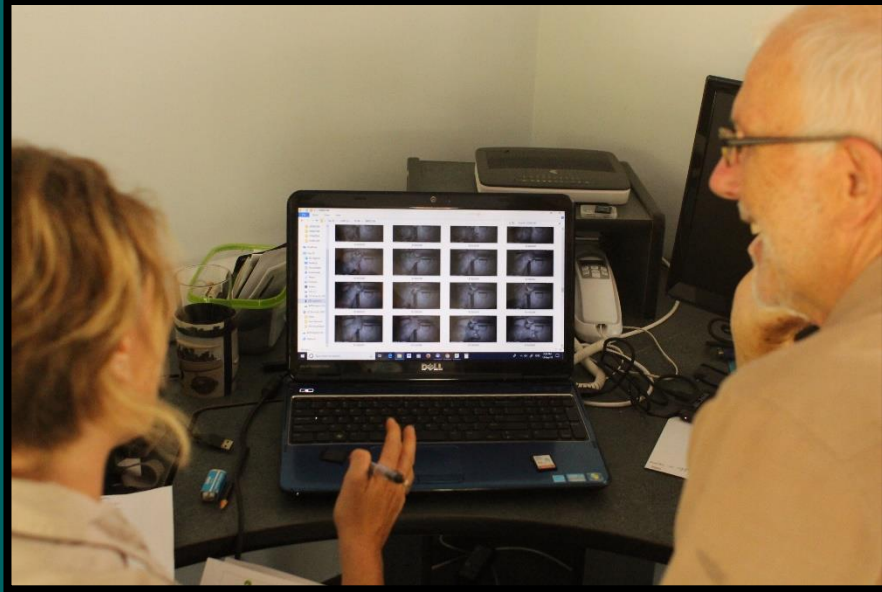


# Nest boxes and motion sensing cameras





# Nest boxes and motion sensing cameras



- On rotation- 3 per landholder/ 2 per landholder
- For 10- 12 weeks per location

# Motion sensing camera results





# Motion sensing camera results



# Motion sensing camera results

2018-10-19 02:58:40

M 3/3

🔋 29°C



HYPERFIRE 2 COVERT





# Motion sensing camera results



# Motion sensing camera results





# Motion sensing camera results

Out of 15 cameras with downloaded data-

- 14 detected possum activity
- 2 detected Sugar gliders
- 5 detected Black-footed Tree-rats (3 nest box use)

# Conclusions and opportunities



- Engaging landholders and students to monitor wildlife
- Adding to data on threatened species
- Combining professional studies and citizen science to enhance range
- Possibilities of using nest boxes to enhance habitat

# Thanks!

- Cobourg Board, Traditional Owners, Rangers
- RIEL supported by funding from:
  - Australian Research Council
  - WA Parks & Wildlife Service (DBCA)
  - NESP Threatened Species Recovery Hub
- Land for Wildlife supported by:
  - TNRM
  - NT Government (Environment grants)
  - NT Parks and Wildlife

