# Understanding ‘bat strikes’ in the Australian Aviation Industry

Jen Parsons[1], David Blair[1] Jon Luly[2] and Simon Robson[1]
[1]School of Marine and Tropical Biology James Cook University.
[2]School of Earth and Environmental Sciences, James Cook University.

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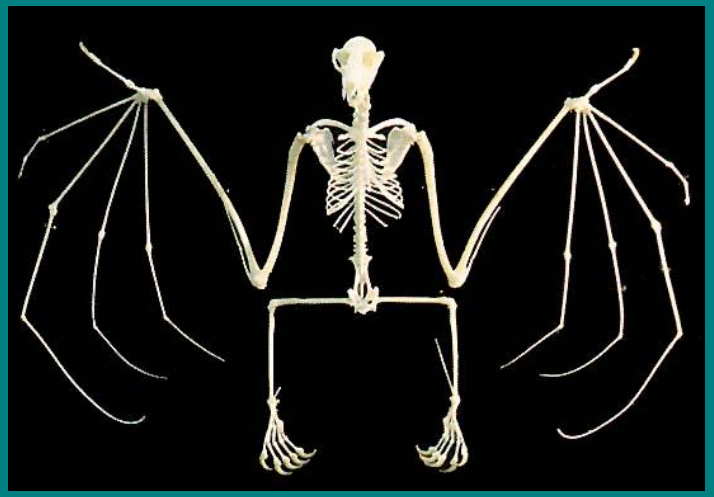
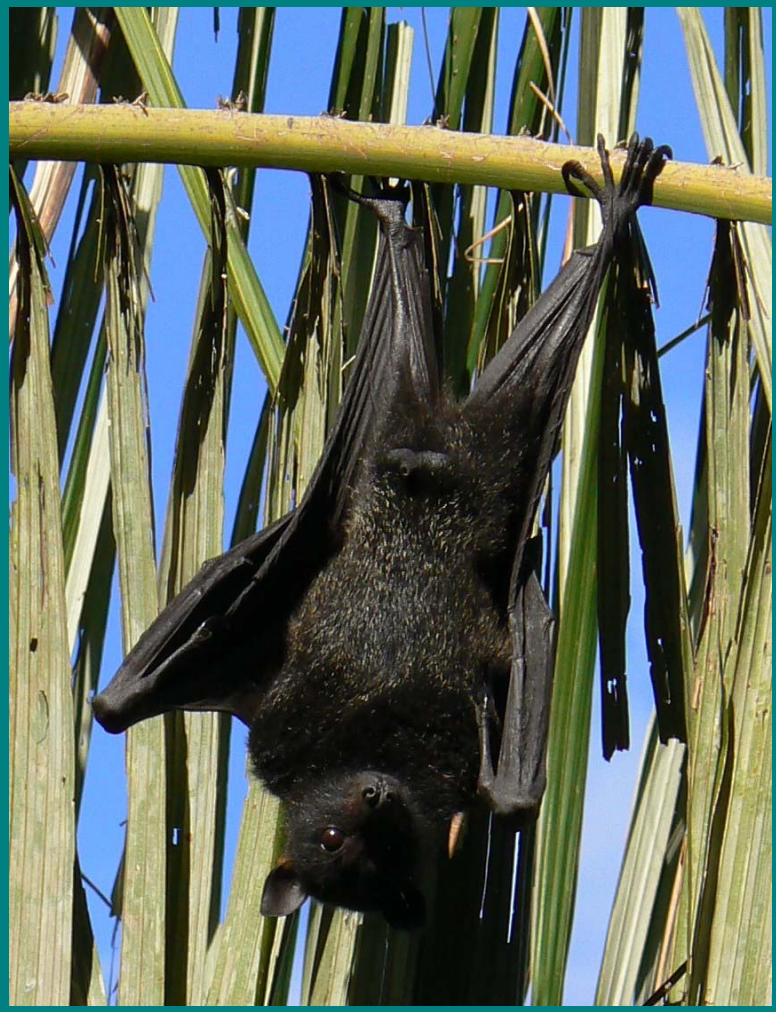
Townsville Airport
*You’re always welcome*

# Bats in Australia





# Bats are not hairy birds

# Flying foxes = high risk

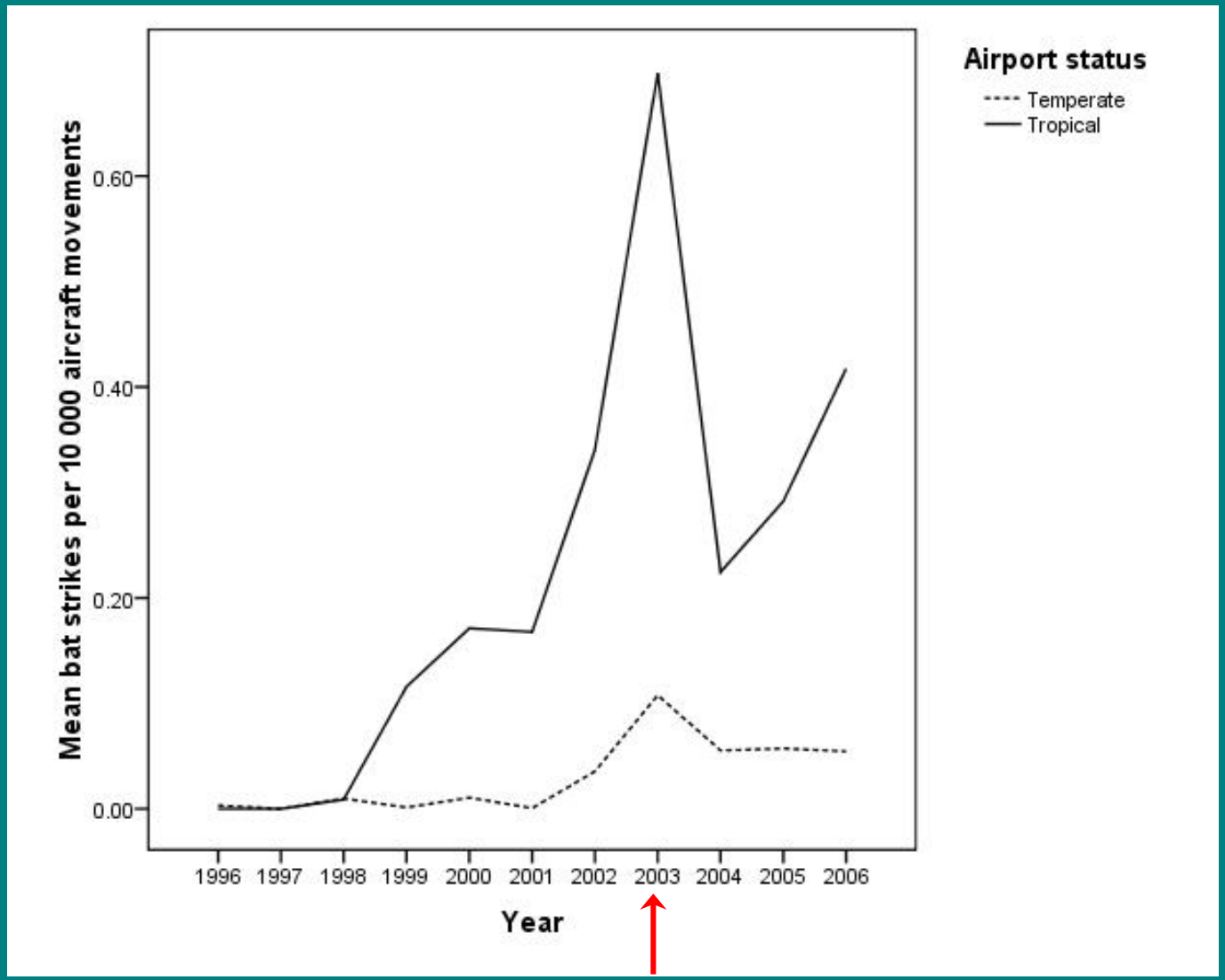
- Large body size
  = increased risk
- Possibility of multiple strikes
  = increased risk
- 25% of detected bat strikes at Townsville Airport caused major damage

The impact:

$$F = \frac{2\pi r^2 p V^2}{3}$$

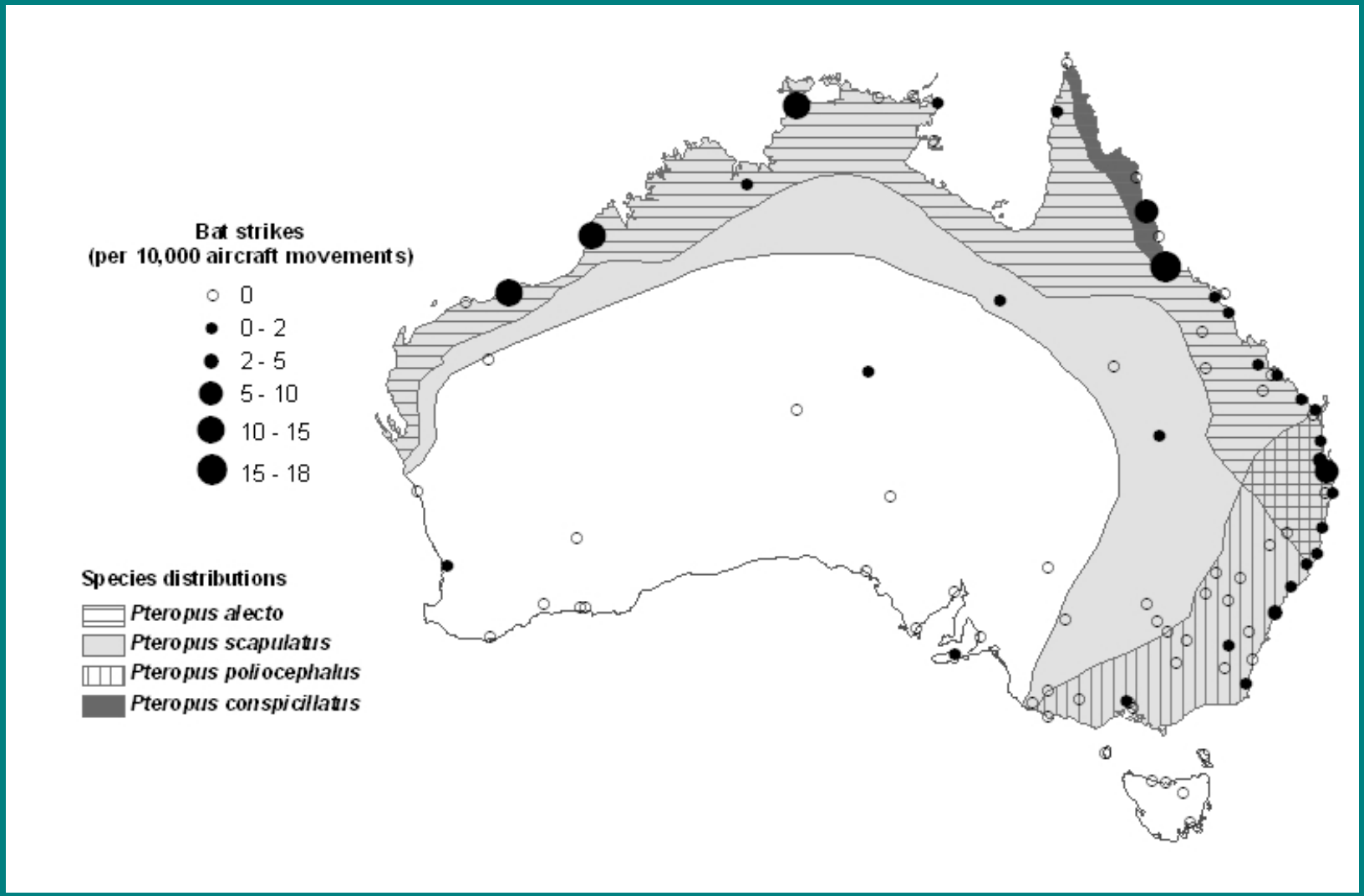
700g *P. alecto* +250 knot aircraft = >5,000kg

# ‘Bat strikes’ are increasing




Parsons et al. 2008 *Journal of Wildlife Management.*

# Bat distribution as risk predictor?



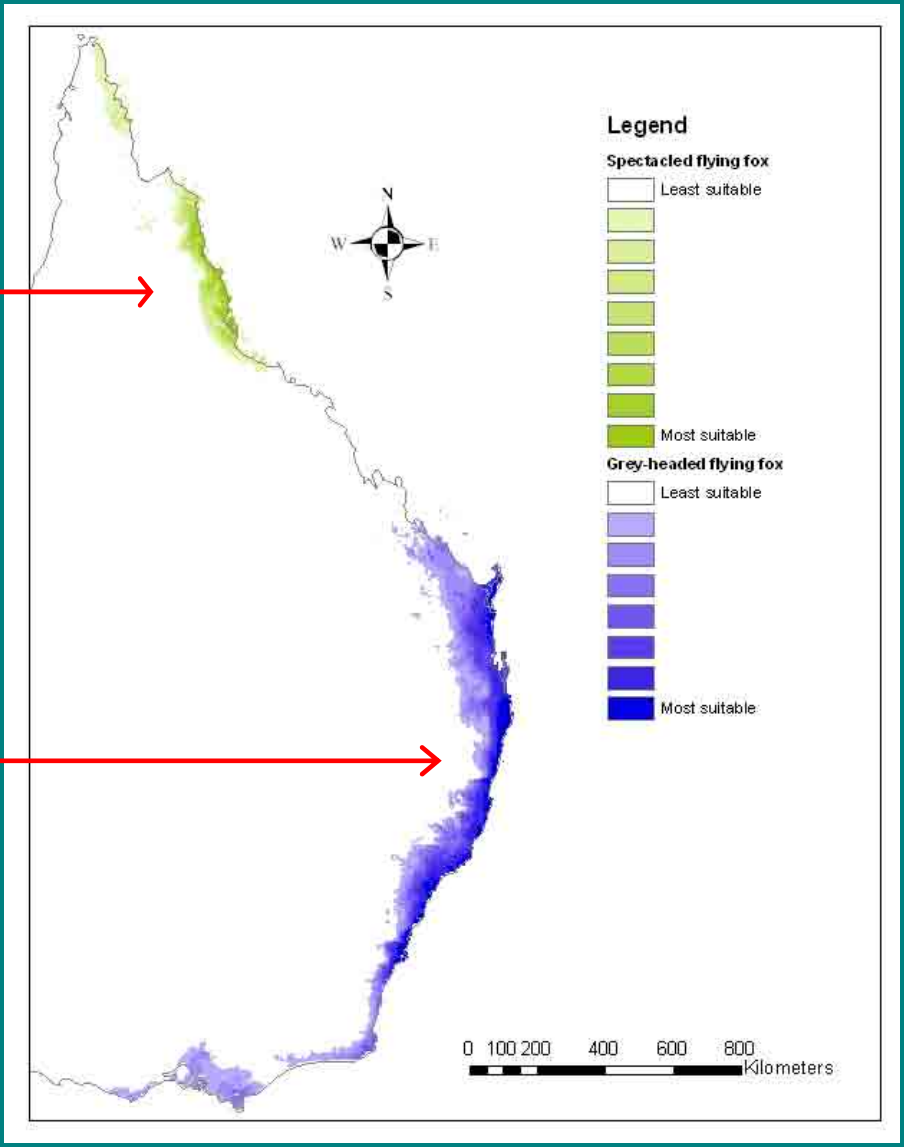

Parsons et al. 2008 *Journal of Wildlife Management.*

# Most bat strikes occur during landing

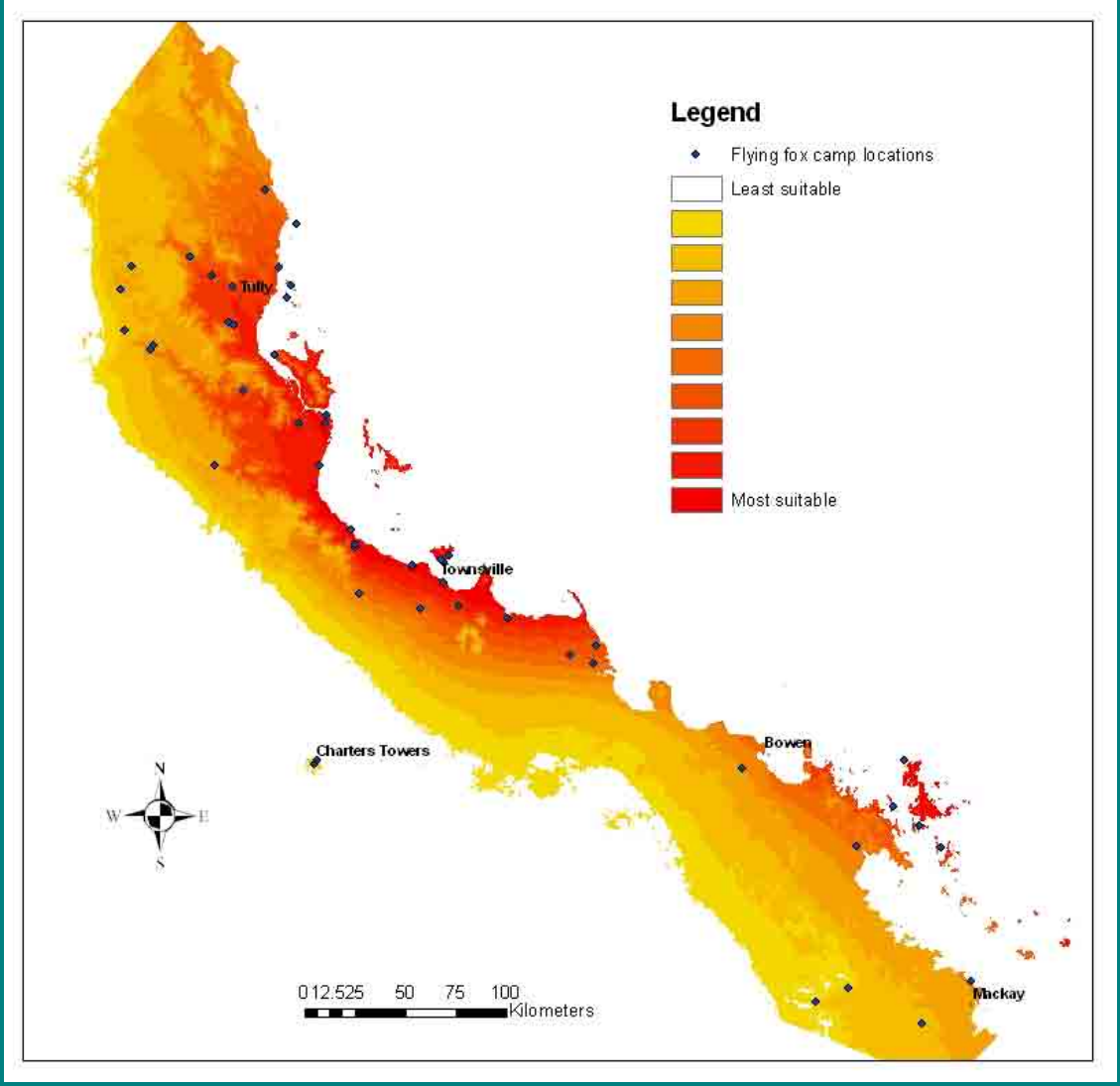
# Roost requirements as risk predictor?

- Proximity to rainforest
- Precipitation of wettest quarter

- Precipitation of driest quarter
- Min. temperature of coldest period



# Roost requirements as risk predictor?



# Field study - Progress report

- Ongoing study on the movement and foraging ecology of flying foxes
- Use of digital imaging to monitor camps
- Intensive dietary study on Townsville’s flying foxes

# Field study - Progress report

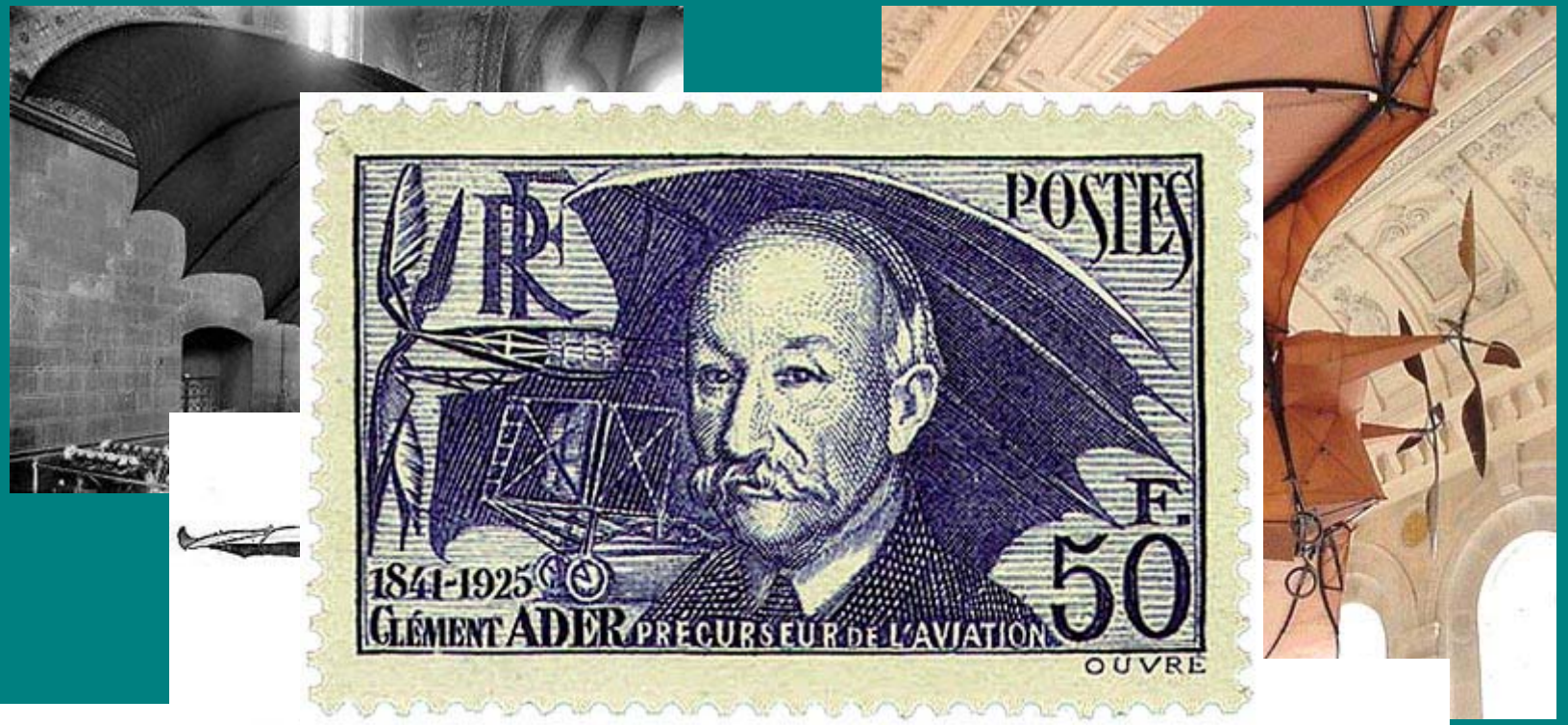
- Developed and installed a motion activated infra-red camera system at Townsville Airport
- Recording commences at dusk
- Monitoring occurs every day for a week on a monthly basis

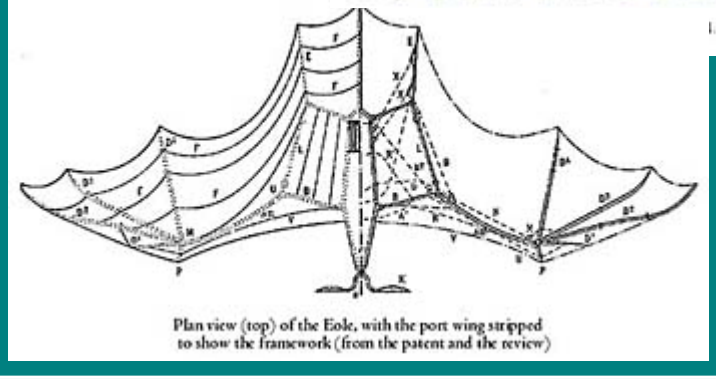
# Future work

- Determine the movement patterns of all flying foxes on a national scale using:
  - Satellite telemetry
  - Genetic technology
  - Habitat suitability modeling
  - Dietary analysis

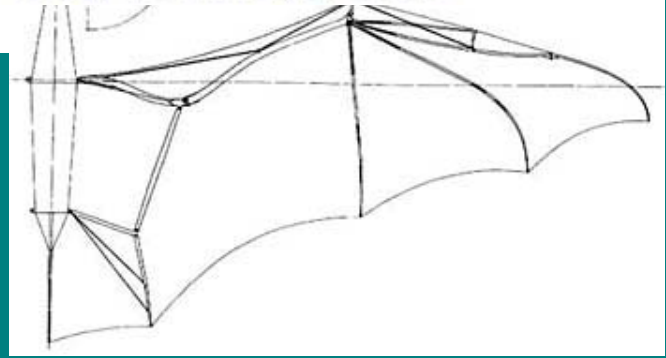
- Continuing collaborations
- Dissemination of results

# Bats and planes haven't always been enemies….



Plan view (top) of the Eole, with the port wing stripped to show the framework (from the patent and the review)



# Acknowledgements


- TAPL – Townsville Airport Pty. Ltd.
- QANTAS, Virgin Blue.
- CASA – Civil Aviation Safety Authority
- ATSB – Australian Transport Safety Bureau
- Department of Transport and Regional Services
- AAWHG – Australian Aviation Wildlife Hazard Group
- Australasian Bat Society