

# The Spectacled flying-fox

A community perspective



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# Context and background

- Found only in NQ, mostly in Wet Tropics
- A Vulnerable species
  - Less than 100,000
  - Declined 75% since 2004
  - Nominated for uplisting to Endangered (2015)
- Recovery Plan (2010) not enacted
- Management and policy over 3 levels of government
- Legislation affecting SFF:
  - EPBC Act, Qld NCA, National Referral guidelines for management SFF and GHFF camps, Qld COP, Planning

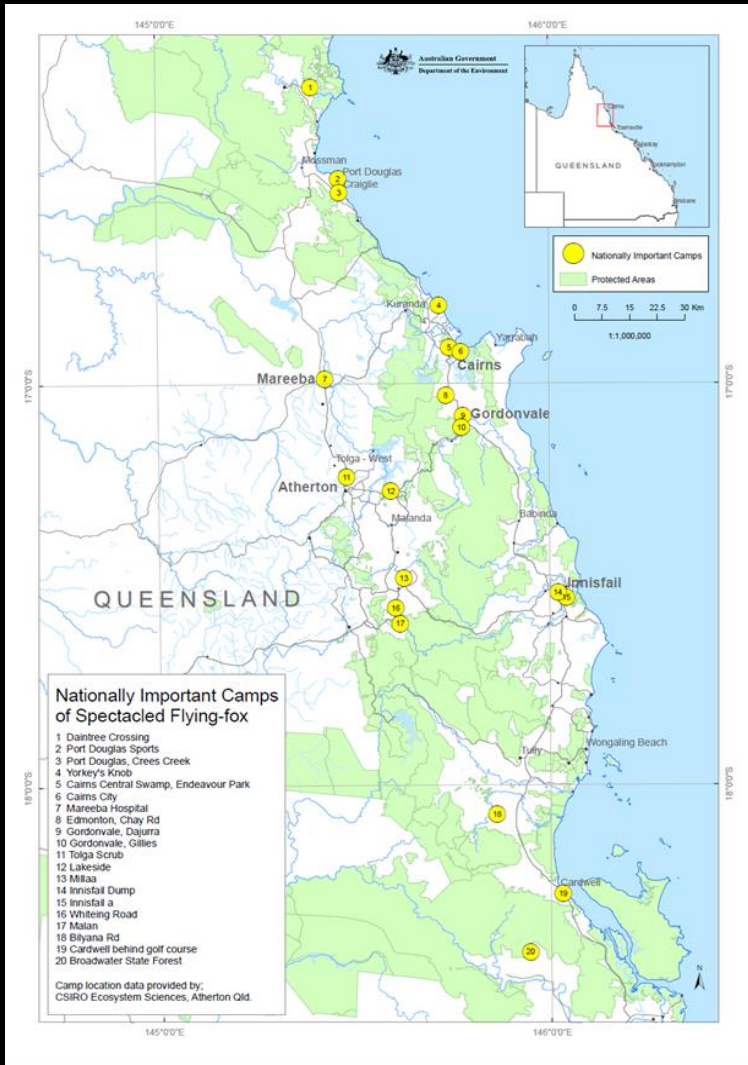
Spectacled Flying-fox  
(*Pteropus conspicillatus*)



# A regional species

## Network of camps

- Urban and non-urban
- Seasonal and permanent
- 20 nationally important camps
- Not all currently occupied
- Some new camps
- Most camps now urban
- Most camps not in protected areas



Camps in Cairns

# Camp attributes

- Canopy > 16m
- Preferred roosting trees at edges or border clearings
- Developed understorey
- Near water



# Threats

- Tolga Scrub – Mabi forest remnant tick paralysis
- Tableland camps- safe, seasonal sites
- Kuranda and Speewah, Seasonal, safe camps, Kuranda not occupied for some time
- Daintree- Seasonal, safe
- Port Douglas- harassment
- Mareeba – dispersal and camp vegetation removal
- Cairns CBD– development, loss of roost trees
- Cairns- Northern Beaches, Anderson St, Murray St, Edmonton, Gordonvale, other urban sites- near residents and/or airport



# Mareeba



Before

- Dispersal including pre-emptive
- Vegetation modification



After

# Cairns

- Issues- a very urban camp
- Management
  - History – chequered
  - Community Education – FFAC, BatSoc Inc
  - Managing conflict- Flying-fox Assessment Matrix; noise/light machine
  - Development pressure
  - Successive roost tree removal
  - (mixed messaging)
- Outcomes
  - 1154 abandoned or dead pups 2017-18 season



**FLYING FOXES**  
living under one sky

### Flying-fox Advisory Committee snapshot

CAIRNS REGIONAL COUNCIL WORKS WITH WILDLIFE EXPERTS, CARERS AND STAFF TO TACKLE FLYING-FOX MANAGEMENT ISSUES

<b>Est. 2015</b>	<b>Community education</b>	<b>Strategic approach</b>
<b>Knowledge and research based advice</b>	<b>5,000+</b> Respondents to flying fox questions as part of the 'Our Cairns' community survey in August 2015.	<b>9 members, including 5 community reps</b>
<b>Includes two Councillors as members</b>	<b>Response to community concerns</b>	<b>Quarterly reports as reports to Council</b>

**Council in action**

Council and FFAC recent highlights:

- Flying Fox Advisory Committee (FFAC) formed
- Safety signage for members by
- Full trial of noise/light machine
- Sponsorship of local tree removal events
- Council led meetings
- Direct engagement with local businesses
- Public trial to assess FFAC meetings
- Education & engagement strategy started
- Full question booklet to target community consultation

**SOUND MACHINE SUCCESS**

In recent months, Council has employed a sound machine on loan from the Royal Sydney Botanic Gardens to assist with approved placement and disposal activities. The highly directional audio device was used from the very early morning before fly-in times to deter flying-foxes from coming to roost, which then allowed for roost tree thinning for the safety and health of the trees and powerlines. Successful demonstrations are provided over 'flying' the flying foxes once they have come to roost.

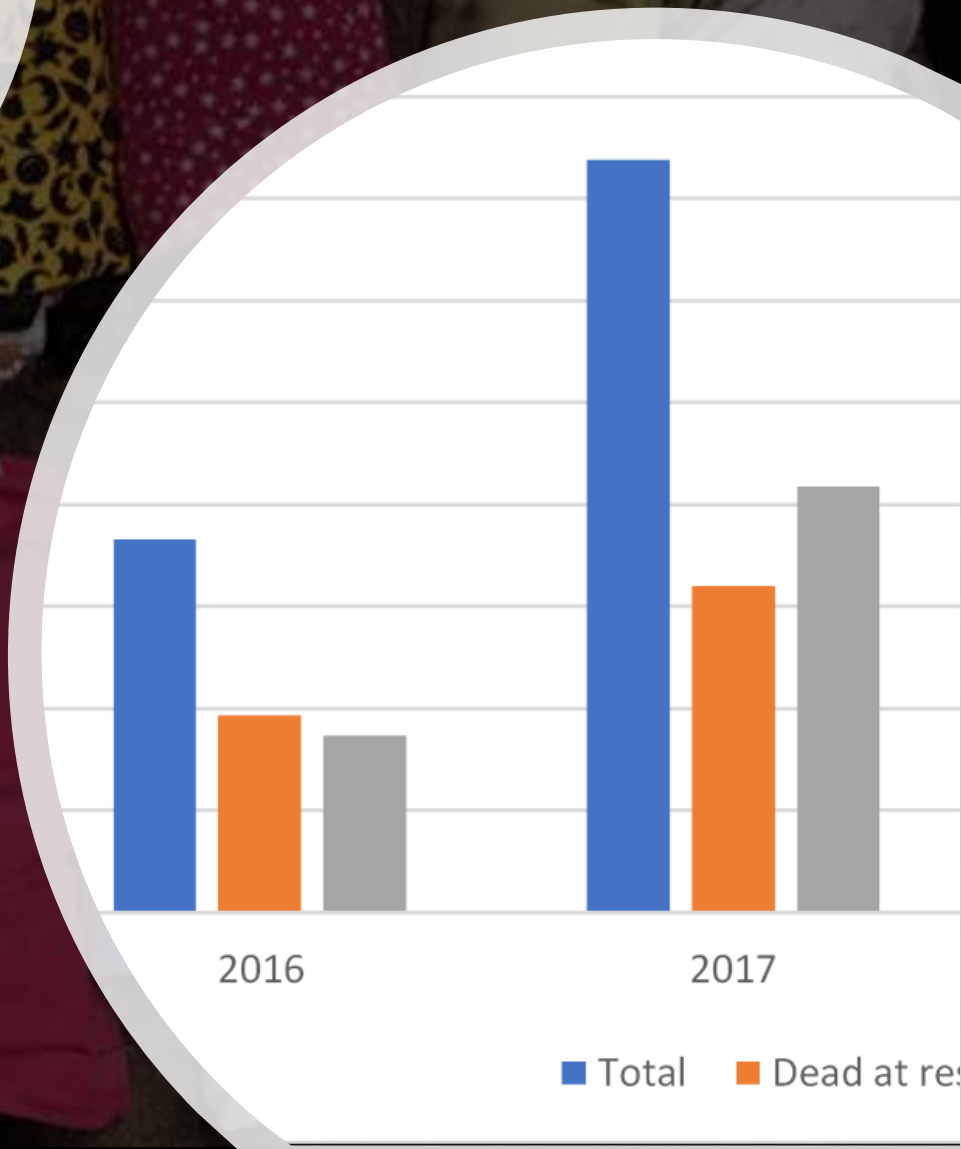
**DISTANT SIRENS, WHIP CRACKS, FLYING FOX CALLS, AND CONSTRUCTION AND DEMOLITION NOISES ARE USED FOR THE DEVICE.**

Cairns Regional Council  
www.cairns.qld.gov.au/bats





# A disastrous season





# Government response

- Local
  - Financial support for carers
  - Funded training for triage and immediate care on rescue
  - Search for safe release site
  - New roosting habitat
    - Encouraging flying-foxes to move to safer camp
- State
  - funding support to assist carers
  - Legislative changes – COP review, NCA, uplisting nomination
  - Response to ABS letter
- Commonwealth
  - Nil response to ABS letter
  - Nomination to uplist- unsatisfactory progress
  - Recommendations from Parliamentary Inquiry FF impacts Eastern Australia



# 2018 season- even more disastrous

- Why?
- Lack of flowering resources- starvation
- Solutions - protect existing and plant new foraging habitat (esp winter flowering)
  - weeding program targeting wild tobacco
  - research into decline other potential causes- eg secondary agricultural chemical exposure

2017 15 Sep – 10 Dec

Camp	Population	Abandoned pups (mortality)
Cape Tribulation	2000	0
Tolga Scrub	20000	50
		30
Ravenshoe	30000	(mostly tick paralysis)
Mareeba	3000	6 (21 dead)
Port Douglas	7000	11 (7 ABL euthanised)
Kuranda	1000	0
Daintree	5000	0
Cairns CBD	4000	418 (320 dead)

2018 30 Aug – 4 Nov

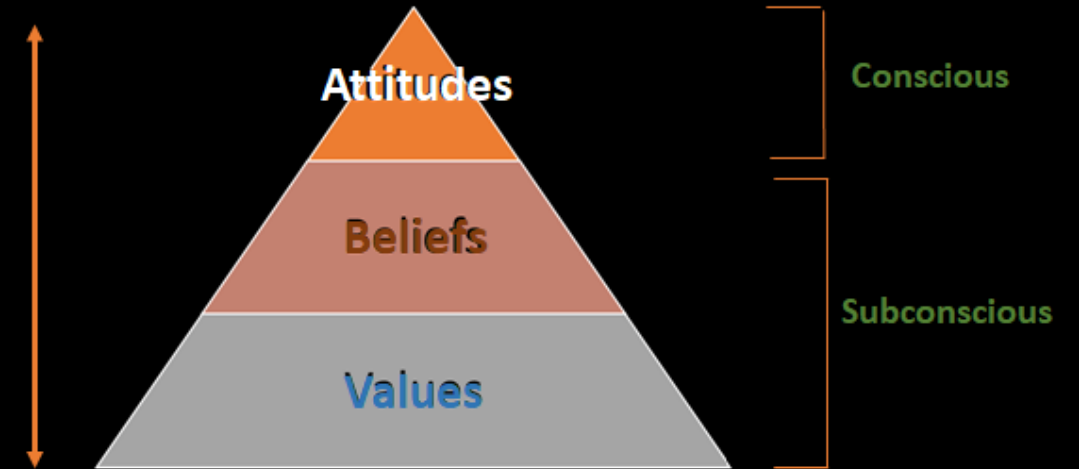
Camp	Population	Abandoned pups (mortality)
Cape Tribulation	3000	20
Tolga Scrub	20000	120
Cairns CBD	3500	159 (151) [104 in care]
Murray St, Cairns	1500	19 (65) [10 in care]
Total Cairns	N/A	230 (227) [137 in care]

# Need for education

- Without community support, conservation of flying-foxes will remain a battle
- Understanding, appreciation, action
  - Connect, Understand, Act
- Is our education working?

## Changing attitudes

Closest to surface – easiest to change



Deepest – hardest to change

Adapted from Fulton 1997

# Does education work?

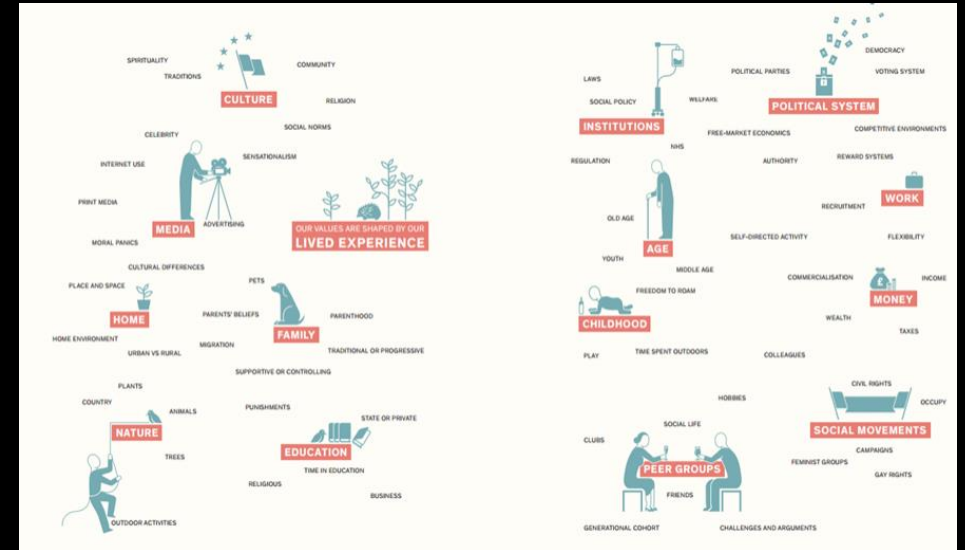
- Education on its own, will not change attitudes
- Need to understand underlying values- break through barriers
- Research to assess education in
  - Community (LGA community engagement strategies)
  - Formal education (schools)
  - Public programs (eg Australasian Bat Night program, Cairns Bat Chats)
- Identify effective components of an education strategy or program
- Assist community education aims of managers and government




# Likelihood of affecting attitudes

- Booth 2008 - table

Characteristic	Group	Likely effectiveness of education	Priority for education
Attitude towards bats	Positive	improve knowledge only	Low
	Ambivalent	Potential to change attitudes	High
	Negative	Limited	Medium
Potential for bat conservation influence	Decision makers- eg Government	Very important	High
	Influential – eg industry bodies, media	Important	High
	Directly impacted – eg orchardists and residents near camps	Important	High
	Not impacted – general public	Important to build support for bat conservation	Medium

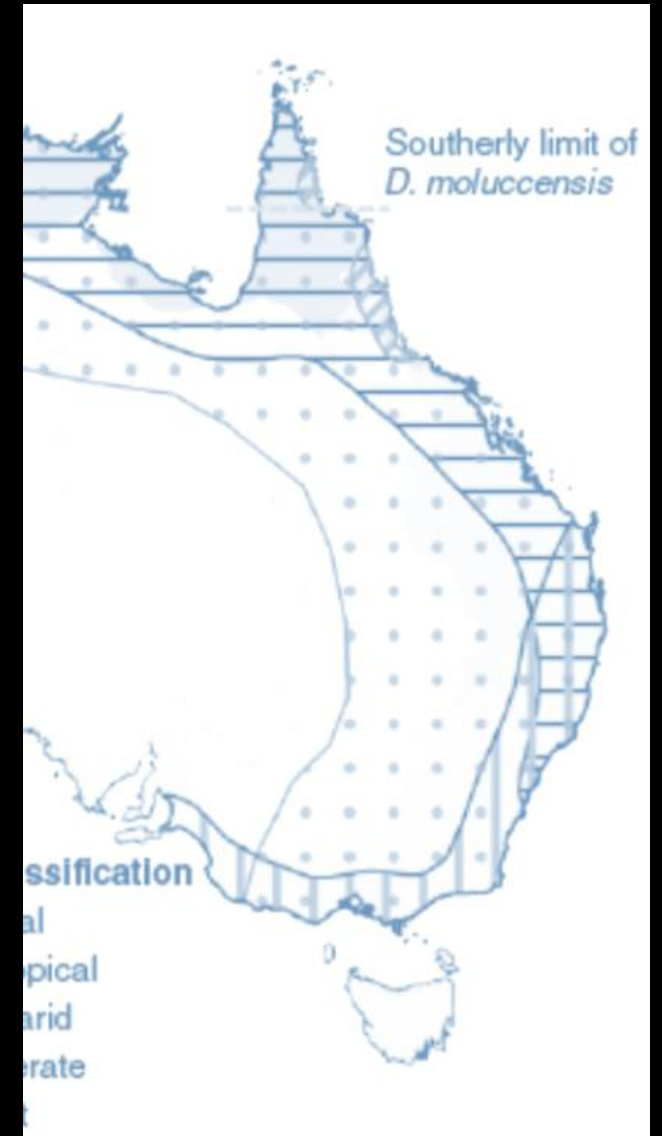




See the  
world from  
my view

# Research design

- BACI survey educational intervention
- Study sites – community & schools (Eastern Australia and Top End)
- Products –
  - Community Education tool kit – Little Aussie battler link
  - Other community education strategies LGA- eg Sunshine Coast, Maclean, proposal for Charters Towers
  - Schools- Australian curriculum bat learning modules
    - Bat Pack (link to ABS site)
    - Bats Qld (link to site)
    - Curriculum vs school visits and excursions (including live flying-foxes)
  - Australasian Bat Night program
  - Cairns Bat Chats
  - Tourism Case Study



# Community Education assessment

- Assess Community education programs
- Audience- residents and managers
- Surveys before and after Education intervention
- What is most effective mechanism to educate about bats and change perceptions?
  - Community education tools- website, brochures, interpretive signage, face to face communication
  - Participatory education (citizen science, getting residents involved)
  - Does meeting a live flying-fox make a difference?
  - Potential financial benefits - Tourism Case study

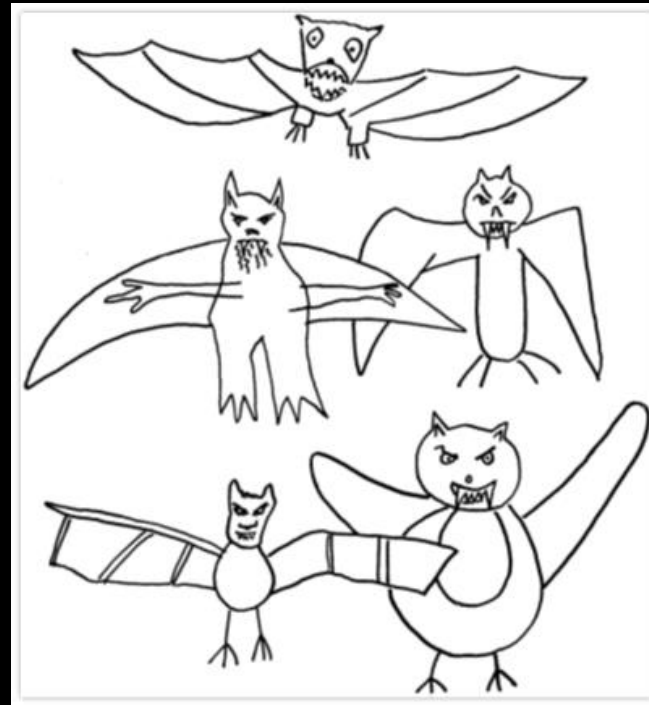




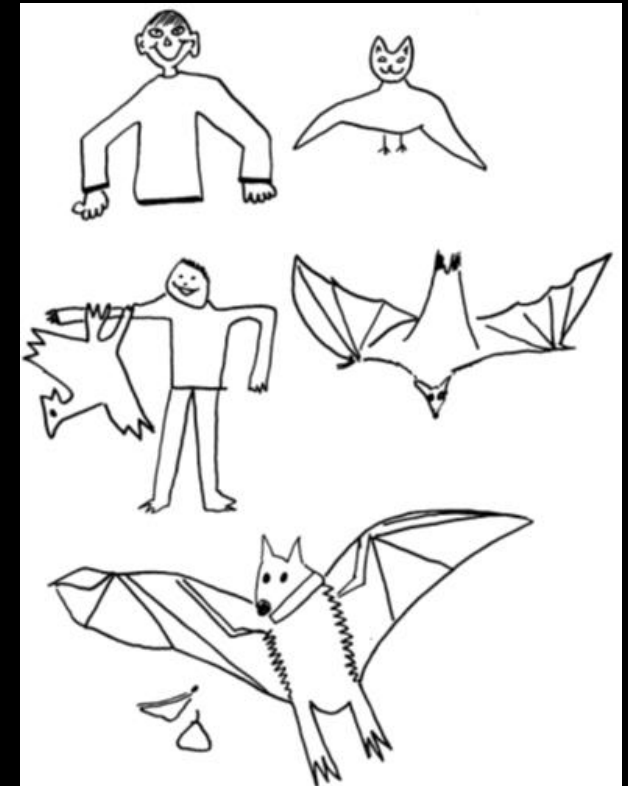
# School education assessment

- Why school children?
- Quasi-experiments
  - What is most effective mechanism to educate about bats and change perceptions?
    - Curriculum based education
    - Visits to schools or excursions?
    - Participatory education (student projects)
  - Does meeting a live flying-fox make a difference?

Before



After



Ford 2002

# Public programs

- Australasian Bat Night
  - What is it?
  - Over 100 events / year. Some events over 700 attendees.
  - How can you be involved?
  - How effective is this in changing public perceptions?  
(will be assessed in my study)



An annual bat-themed program of community events coordinated by the Australasian Bat Society

Modelled on European Bat Night, the Australasian Bat Night program began with a handful of events in 2012, and by 2018 had grown to over 100 events in all Australian states and New Zealand.

**Raising awareness and promoting appreciation of bats throughout Australasia**

- **Community engagement** Local events engage with local communities
- **Partnerships** Local governments and departments, landcare, bat & other community groups, scouts, artists, museums, zoos & parks, schools & individuals
- **Education** Learning from bat experts. Debunking myths. Participating in research projects
- **Fun** Family and kid friendly. Craft & games. Enjoyable bat picnics. Memorable flyouts

**Bat Night Resources**

 <p><b>People: Bat Speakers</b></p> <p>Experienced speakers for general bat talks &amp; walks or specialist talks on latest research</p>	 <p><b>Presentations</b></p> <p>Bat Night presentation examples &amp; templates, photos etc.</p>	 <p><b>Information</b></p> <p>Printed Bat Facts, stickers and materials for children's activities</p>	 <p><b>Ideas for bat nights</b></p> <p>Including for Bat talks and walks, flyout picnics, bat festivals as well as bat box, monitoring &amp; citizen science projects</p>
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The Australasian Bat Society works with local communities to raise public awareness about bats, their habitats and conservation needs.

An appreciation and understanding of bats can help people to live with bats.

The Australasian Bat Night program is helping to create a more bat ecologically literate community.

Photo credits and acknowledgements: Australasian Bat Society, Centennial Parklands, Lisa Cawthron, Helen Douglas (Holley Designs), Micoela Jamison, Michael Penny, Louise Saunders, Tracy Siverson, Justin Welbergen, David Wilke.

Australasian Bat Society [ausbats.org.au](http://ausbats.org.au)

# Education on the Spectacled flying-fox Cairns

- Events



- Products



- Key Messages

- One health approach risk messages
- Living under one sky
- Ecological importance and conservation
- Managing conflict and government responsibilities

# Innovative interpretation

- Enhancement of existing education and interpretation
  - Bat scats at Bat Chats
  - Beacons at library
  - School plays about SFF (winning plays exhibit at Bat Festival)
  - Bat Festival ideas- Bat Kids on stilts, Batty Treasure hunt and BatPuzzle/ mobile, Batffity (Bat graffiti), book readings, craft at the Bat Cave
  - Bat skeletons, stuffed flying-fox and other artefacts
  - Fruit Bats – junior club of BatSoc Inc
- Live webcam- follow a bat
- Bat Tourism Trail app
- Virtual Reality experience
- Interview with a flying-fox




# Spectacled Flying-fox Virtual Reality




Experience  
my world

# Bat Tourism Trail



 To join the BatMap beta, tap the link on your iPhone or iPad after you install TestFlight.



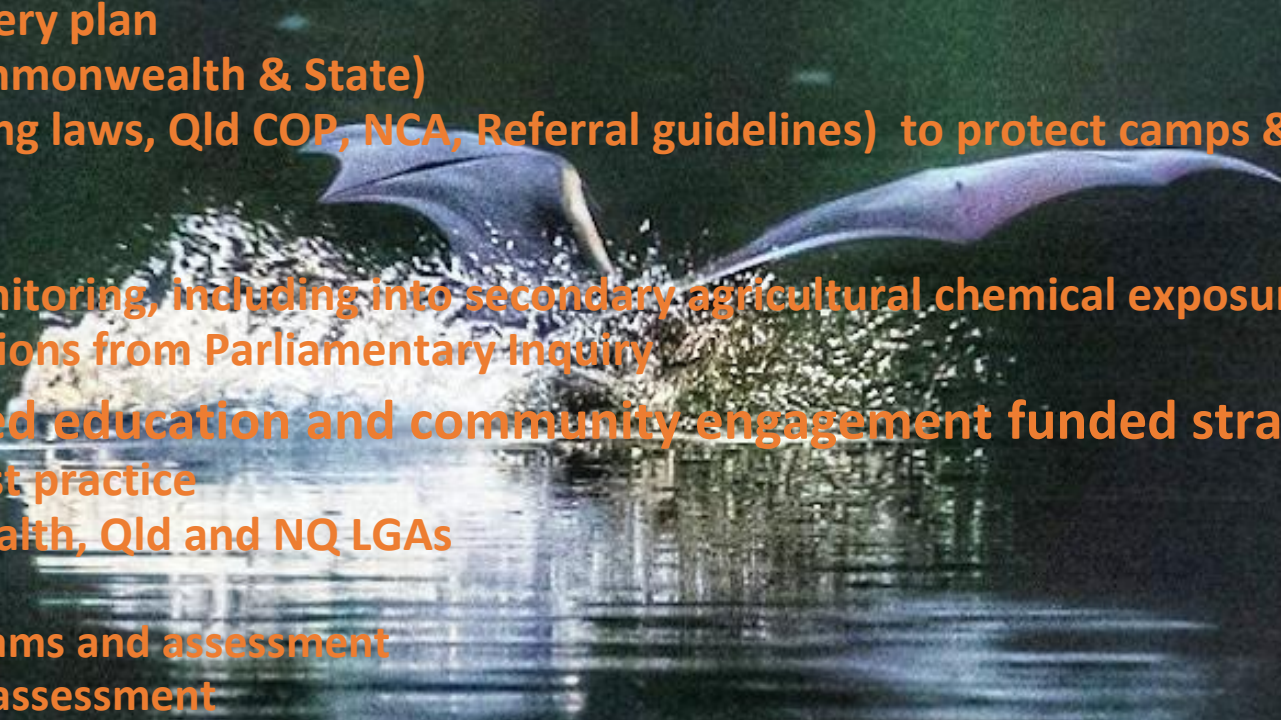
## Testing Apps with TestFlight

Help developers test beta versions of their apps using the TestFlight app. Download TestFlight on the App Store for iPhone, iPad, and Apple TV.

Feedback: [ausbattrail@gmail.com](mailto:ausbattrail@gmail.com)



# Summary

- SFF is declining
  - Urgent conservation measures
    - Review, implement Recovery plan
    - Uplist to Endangered (Commonwealth & State)
    - Change legislation (planning laws, Qld COP, NCA, Referral guidelines) to protect camps & foraging resources
    - Stop habitat loss
    - Eradicate wild tobacco
    - Increase research and monitoring, including into secondary agricultural chemical exposure
    - Implement Recommendations from Parliamentary Inquiry
  - Comprehensive coordinated education and community engagement funded strategy
    - Based on research and best practice
    - Supported by Commonwealth, Qld and NQ LGAs
      - One health messaging
      - Communication programs and assessment
      - School education and assessment
      - Innovative interpretive ideas
      - Citizen science projects
      - Bat tourism
    - Partnerships with WTMA and other conservation and community organisations
  - Financial Support for bat carers
- 
- A photograph of two flying foxes in flight over a body of water at night. The bats are silhouetted against a dark, starry sky, with their wings spread wide. The water below is dark, with some light reflecting off the surface, possibly from the moon or stars. The overall scene is serene and captures the natural behavior of these animals in their habitat.

