# Understanding the history and restoration methods for koala populations

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# Introduction – Meet the Koala

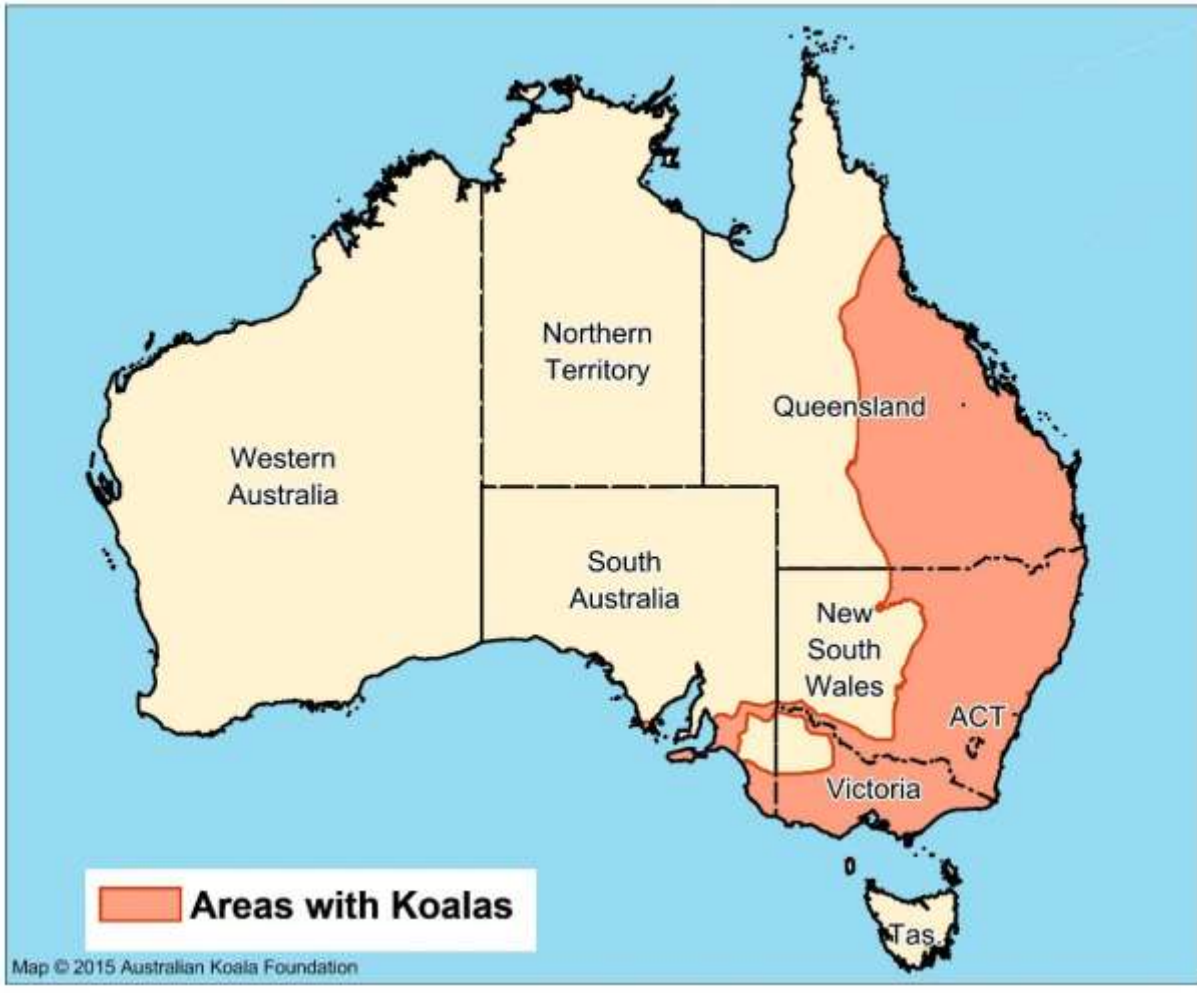
- Iconic native Australian marsupial
- Umbrella species
- Gum tree folivore – picky with species
- Males below in breeding season

# Where are they found?

North

South

- North QLD – VIC & eastern SA
- Introduced to Adelaide, Kangaroo Island & French Island
- Northern limit = Magnetic Island
- Fossil record -> out to eastern WA
- North koalas = smaller



# Threatening processes

- Early 1900s – fur trade
- Habitat clearance
- Wild fire
- Car strikes
- Wild dogs
- Disease – Chlamydia
- Climate change

- ½ former distribution in NSW


# Decline of woodland fauna

- Woodland birds –

Vulnerable: Brown treecreeper, spectacled warbler, superb parrot, painted honeyeater

Critically endangered: regent honeyeater

- Squirrel glider, many microbats!

- Ultimately, tree removal is **key**

# Mid-western Region – Past distribution & core populations

- Extended out to Ivanhoe
- Reliant on *Eucalyptus camaldulensis* water courses
- Present: Isolated pockets e.g. south of Bathurst, Gunnedah, Narrandera
- Nearest pops -> Cows Flat, maybe Newbridge

# Steps to increase woodland biodiversity

1. Identify core habitat/landscape connectivity

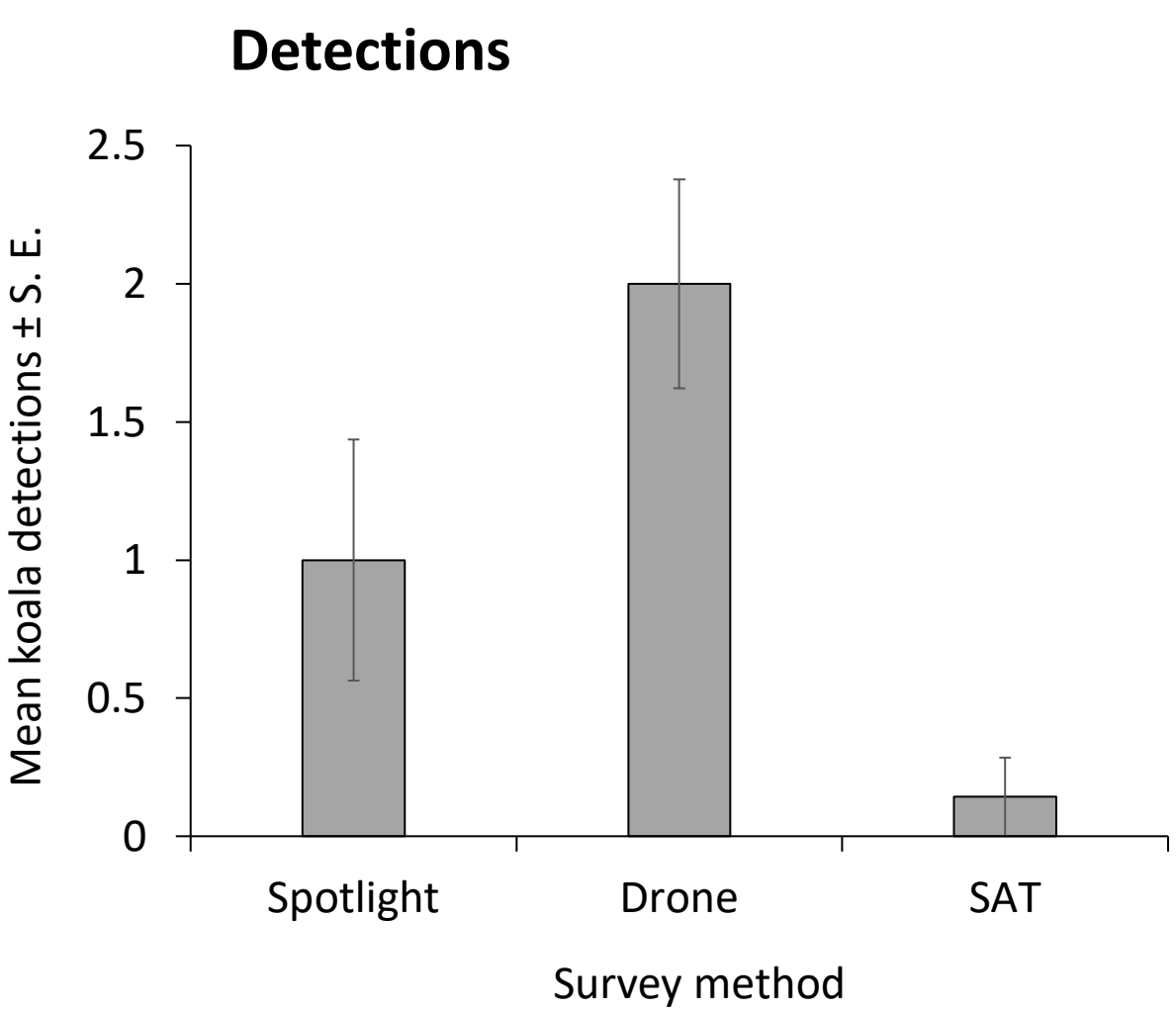
2. Restore woodlands – starting from watercourses

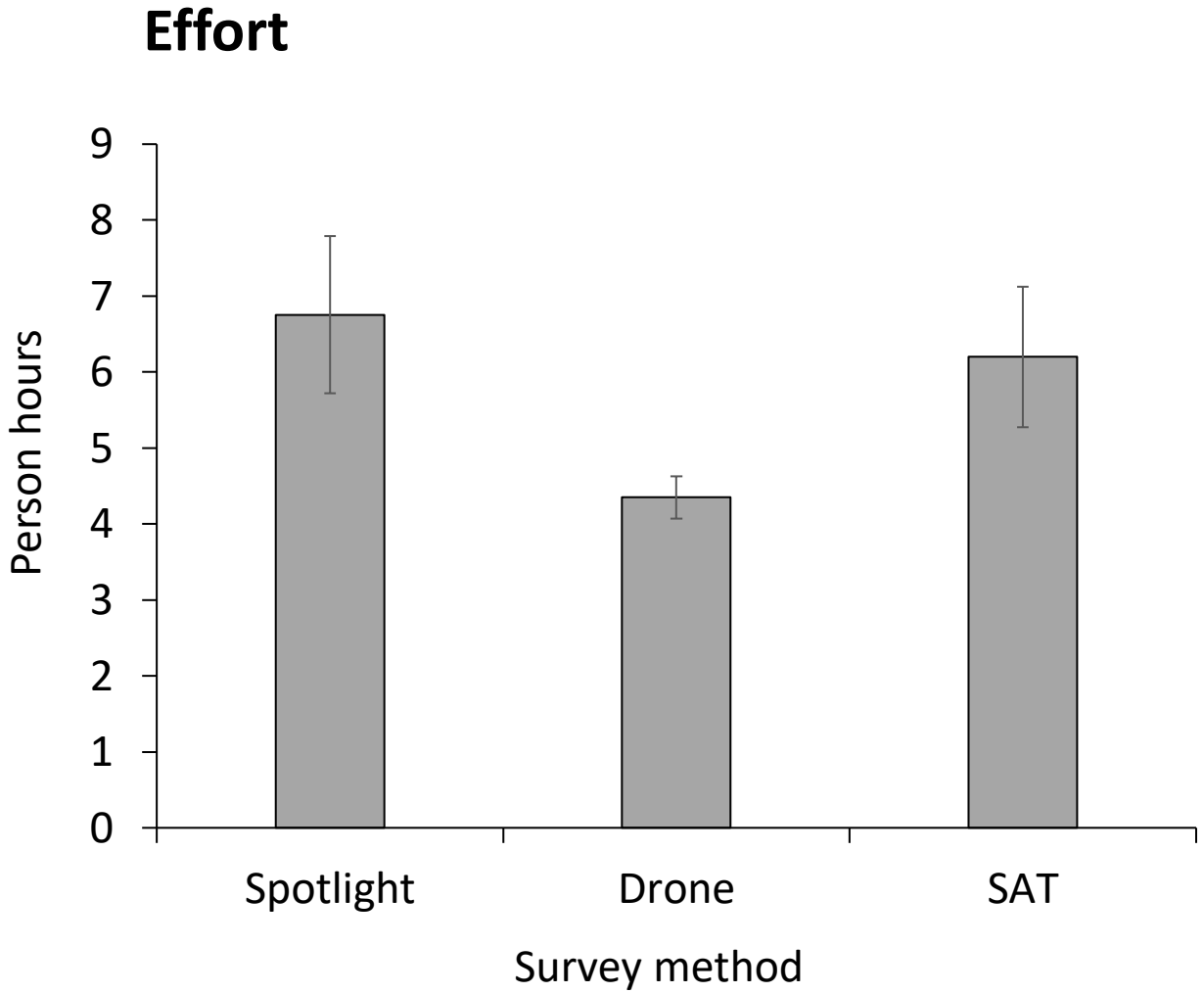
3. Monitor response – rinse and repeat

# Identifying core habitat – How to find them?

- Scats
- Spotlighting
- Detection dogs
- **Drones**


# Comparison of methods

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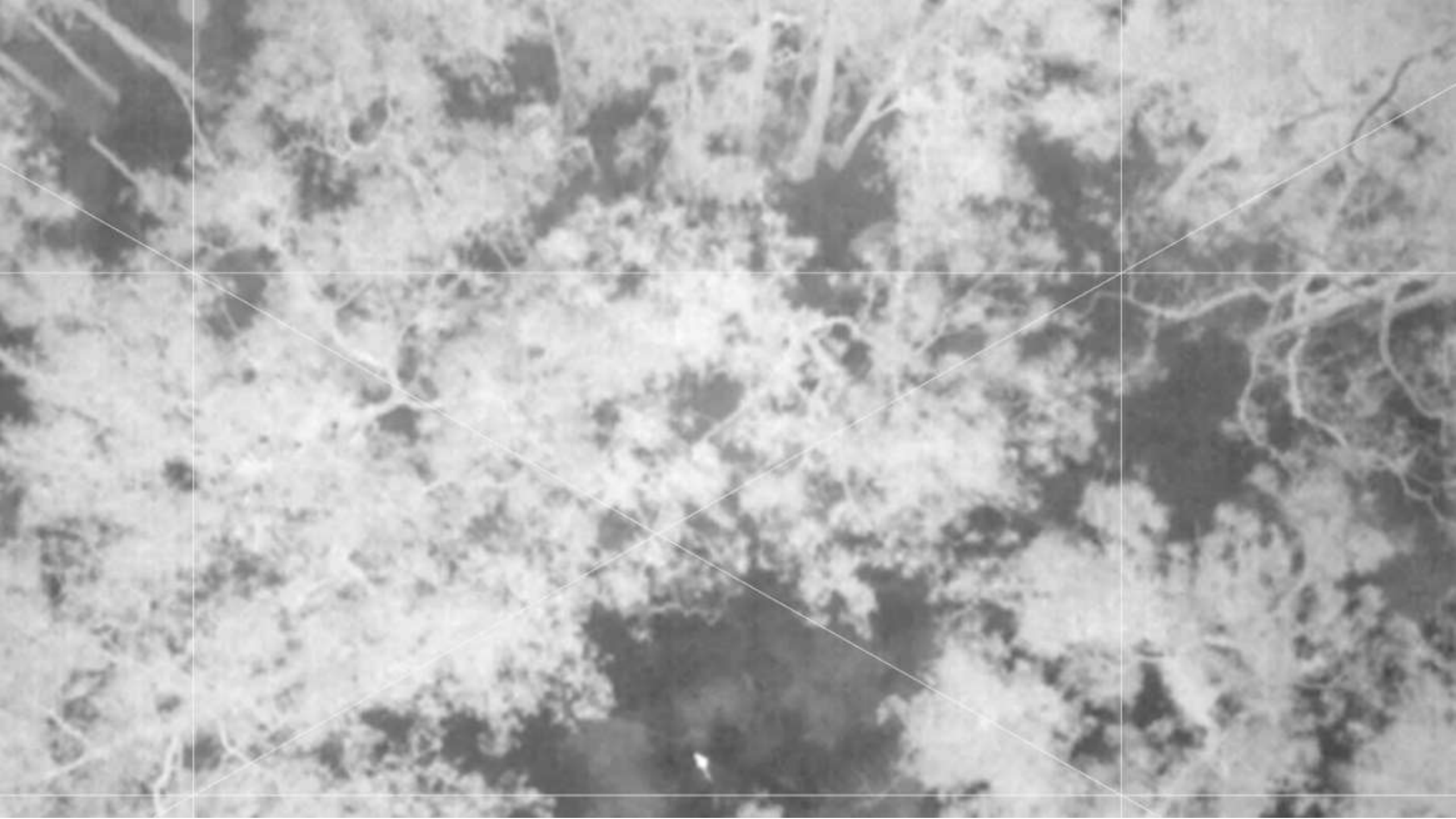


# Restoring woodlands – Koala preferred tree sp.

Primary

- *Eucalyptus albens*
- *Eucalyptus amplifolia*
- *Eucalyptus blakelyi*
- *Eucalyptus camaldulensis*
- *Eucalyptus mannifera*
- *Eucalyptus viminalis*

Secondary

- *Eucalyptus rossii*

# Start from the water courses

- *Eucalyptus camaldulensis*
- Often the last cleared – offers most connectivity
- Also improves waterways

…water sources are VERY important for western koalas!

# Water sources & coping with the heat

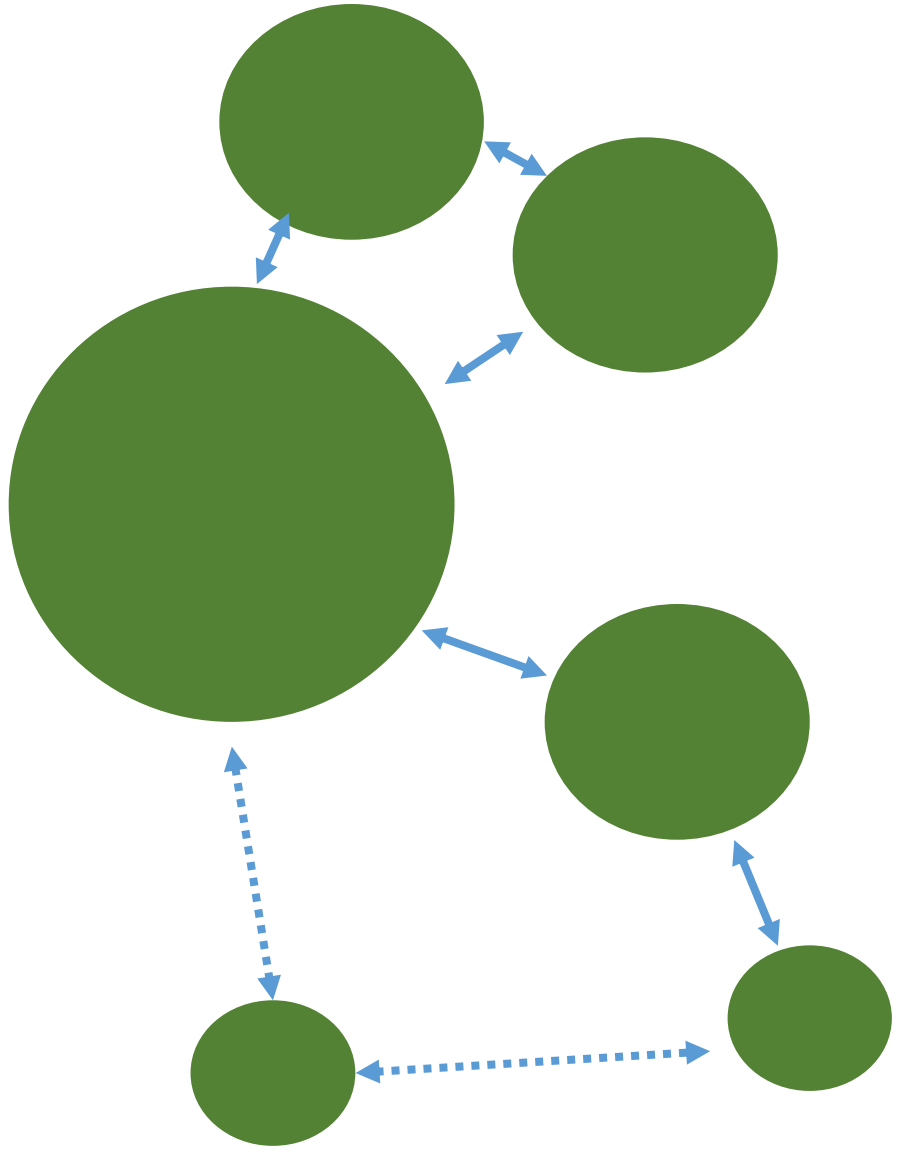
- Heatwaves absolutely knock koalas out!
- Day time trees verse night time trees
- Seasonal movements
- Sources of water
  - Dams
  - Rivers
  - Studies trialling koala drinking stations

# Maximising farm dam health

- Establish water plants
- Reduces CO2 emissions
- Cleaner water
- More habitat for birds and frogs!

# Restoring woodlands – Benefits for other threatened species

- Co-occurring threatened species
  - Squirrel glider
  - Birds
- Corridors & connectivity
- Enhance metapopulation dynamics



# Squirrel Gliders

- Similar to sugar glider (but threatened!)
  - Bigger, fluffier tail, stronger facial markings
- Likes more open woodland
- Found in Koorawatha NR, Dananbilla NR, Godfreys Creek

# Importance of on-going monitoring

- Establish baseline data
- Compare long-term trends
- Determine if there are positive or negative trends
  - Are management actions effective?
  - Determine negative responses to disturbances

# What to monitor & how?

- Standardised surveys – occupancy, abundance
- Population assessments using CMR – population size, survival rates, recruitment
- Movement – GPS-tracking, ear tags etc.
- Population genetics – movement, effective population size, inbreeding, ancestry

# Implementing monitoring programs

- As an individual -> report all records to Bionet
- As a group -> establish a community/volunteer monitoring program
- As a funded body -> establish partnership w/ ecological researchers

# BioNet

www.bionet.nsw.gov.au

Not secure | bionet.nsw.gov.au

NSW GOVERNMENT Environment & Heritage

BioNet
*the website for the Atlas of NSW Wildlife*

HOME | ATLAS SEARCH | VIS FLORA SURVEY | OPEN API

Home > Bionet

## NSW BioNet

- *gateway to NSW biodiversity information*

NSW BioNet is the repository for biodiversity data products managed by the Office of Environment and Heritage (OEH).

BioNet aims to improve biodiversity outcomes by enabling the community and government to proactively manage and enhance biodiversity in NSW

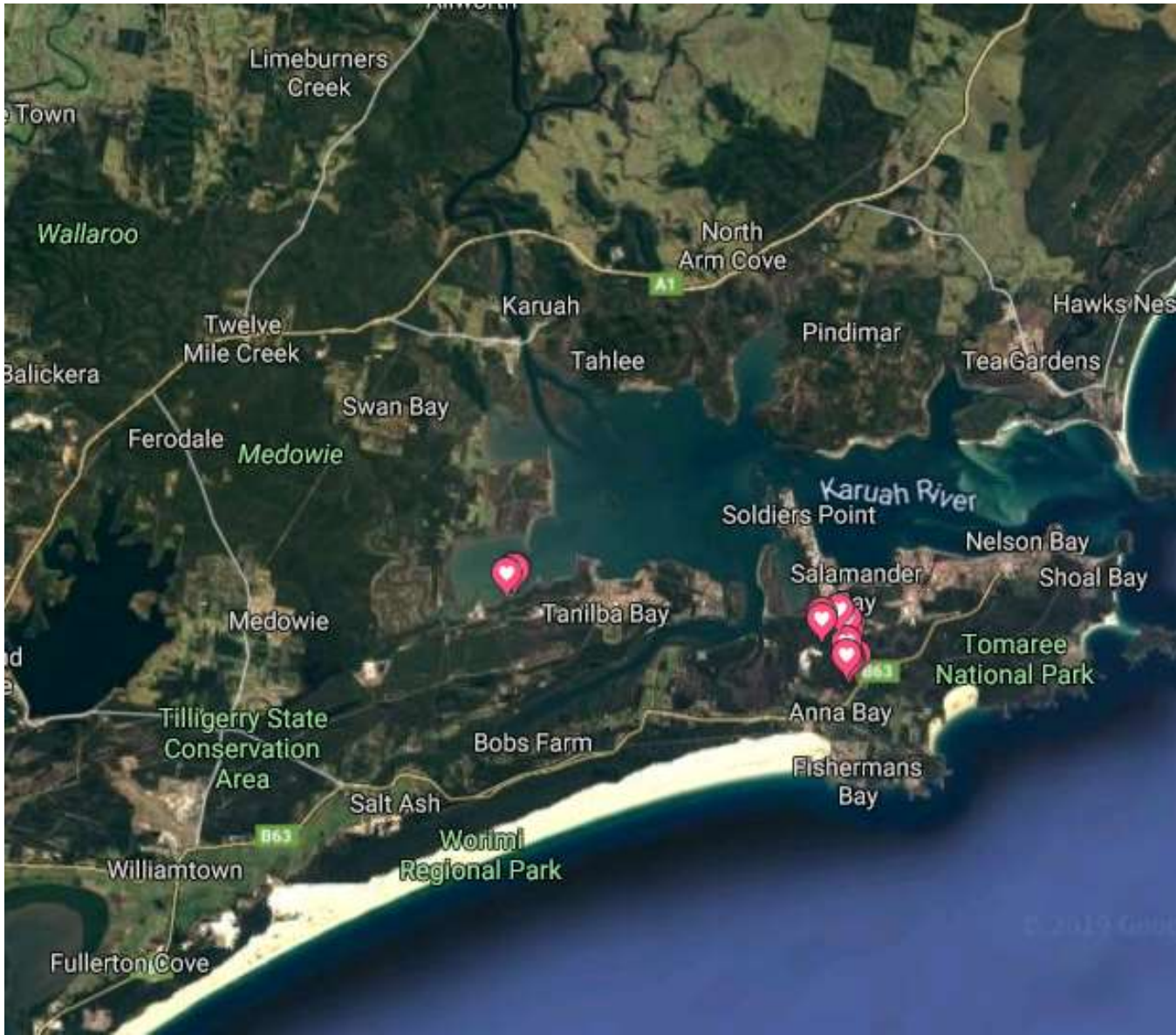
### News

- Newsletter April 2019
- Newsletter December 2018
- Newsletter September 2018
- Newsletter December 2017

Your Feedback

# Port Stephens koala population restoration – Case study

- Koala hospital
- How many koalas are going through rehab compared to population?
- What is the population size?
- What are the reasons for admission?
- Where are the hotspots for admission?



# Conservation management

**Increase recruitment**

- Feed trees
- Supplementary translocation

**Decrease mortality**

- Underpasses/overpasses
- Community engagement
- Management of disease hotspots

# Thanks for having me ☺

**Contact details**

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Don’t hesitate to ask for info about wildlife!