



**Save Birds,
Save Life**



Photo Credit: Dr Nick (Hamilton)

Thank you STEP Team for inviting me to speak today, for your ongoing support of the Powerful Owl Project and your tireless efforts to protect the natural environment.



STEP INC

Community-based Environment Protection since 1978



Powerful Owls of the Greater Sydney Basin



Meredith Foley

The Powerful Owl Project

Who are we?

- BirdLife Australia's Urban Birds Conservation Program threatened species project.
- Citizen Science Project – our volunteers are the heart and soul of our project.
- Two projects running:
 - Greater Sydney – since 2011
 - SE QLD – since 2017



Photo: Louis Petrucco

Some of your Local Legends!

- Survey and monitor owls
- Record observations
- Perform necropsies
- Alert us to disturbances and threats
- Write submissions
- Inspire others to protect wildlife and the environment



Powerful Owl Coalition – more Local Legends!!

A group of community environmental groups working in collaboration with the Powerful Owl Project of BirdLife Australia.

Passionate people working tirelessly to protect the natural environment.

Position Paper: *Protecting Powerful Owls in Urban Areas – Powerful Owls Benefit People (2018)*



Why all the fuss about Powerful Owls?

- **Threatened Species:** face a high risk of extinction in the medium-term future.
- **Flagship species:** capture the attention of the general public and draw attention to environmental conservation more broadly.
- **Apex predator:** help to keep the ecosystem in balance.
- **Umbrella species:** when we protect habitat for Powerful Owl, we protect it for all the other species that share the same space.
- **Hollow breeders:** there are over 300 other species of Australian fauna that rely on tree hollows for shelter and/or breeding. Powerful Owls need possibly the biggest hollows and the oldest trees.
- **Won't use nest boxes:** no old trees = no Powerful Owls.



Powerful Owl (*Ninox strenua*)

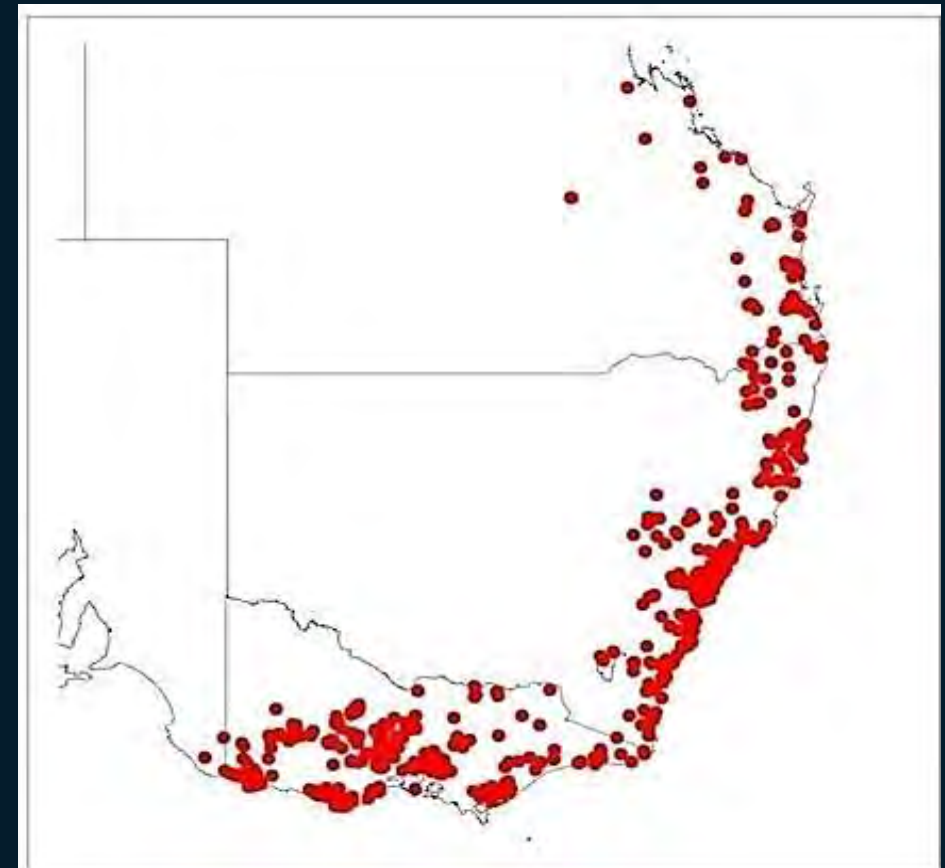
- Australia's largest owl
- 60cm from head to tail
- 140cm wingspan
- Males weigh ~1.5kg
- Brown chevrons
- Double hoot; owlets trill
- Territorial and live for 25-30 years





Distribution

Powerful owls live in forests. They can also be found in the suburbs of Melbourne, Sydney and Brisbane

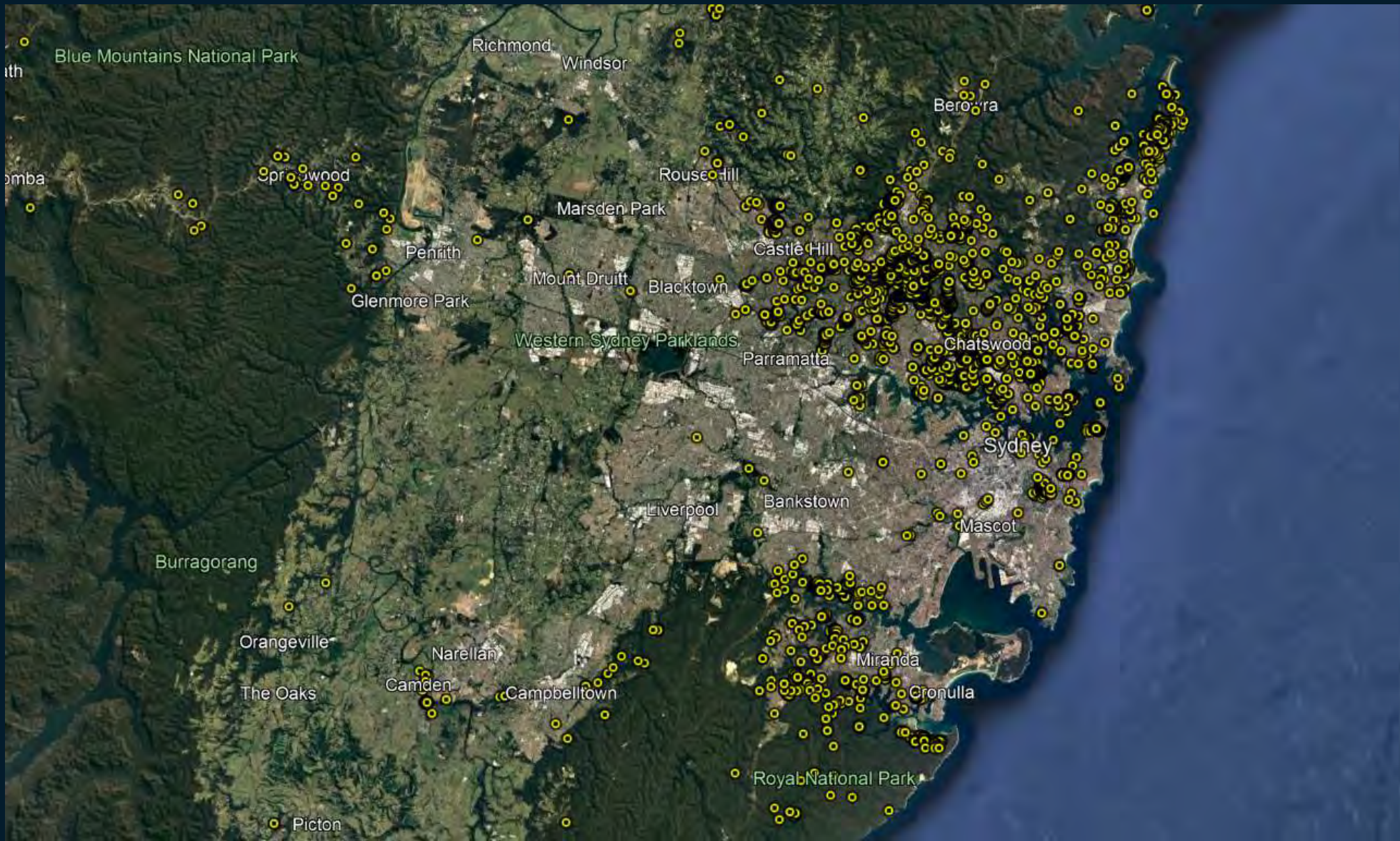


Conservation Status

They are formally recognised as a threatened species in every state across their range.

At Federal Level they are classified as Least Concern ...?!

Sydney Basin Distribution Map



‘Fingers’ of Remnant Bushland

The local Powerful Owl population densities are some of the highest in Australia.

Gully ‘fingers’ of remnant bushland amongst the suburbs provide:

- Large old hollow-bearing trees
- Dense riparian vegetation
- Abundant prey species – big mature suburban gardens support prey







High Population Densities – The Interesting and The Ugly

The Interesting

‘Chick mix-ups’

The Ugly

Territorial aggression – death of local dispersing juvenile



Photo: Michael Bianchino

Powerful Owls are Hollow Breeders

- Nest trees are 150 or more years old – our woody elders!
- Live or dead
- DBH usually >70cm
- These trees are past their prime – selectively removed from urban areas
- POs don't use nest boxes

If we lose our big old trees,
we'll lose our Powerful Owls



Photo credit: Cathy Cook

Powerful Owl Breeding Cycle in Sydney



Powerful Owls Breed once a year in Winter

March/April: courting; lots of hooting; investigating hollows

May/June: egg laying – 2 eggs

Late July/Early August: fledging season begins

March onwards: dispersal of juveniles

Tree canopy is very important for Powerful Owls

- Tracking studies in Sydney (POP) and Victoria (PORT Deakin University) show that Powerful Owl movements are highly associated with tree canopy.
- POs generally hopscotch through the landscape with short flights from one greenspace to the next
- Powerful Owls' prey is predominantly arboreal mammals.
- Important for dispersing juveniles

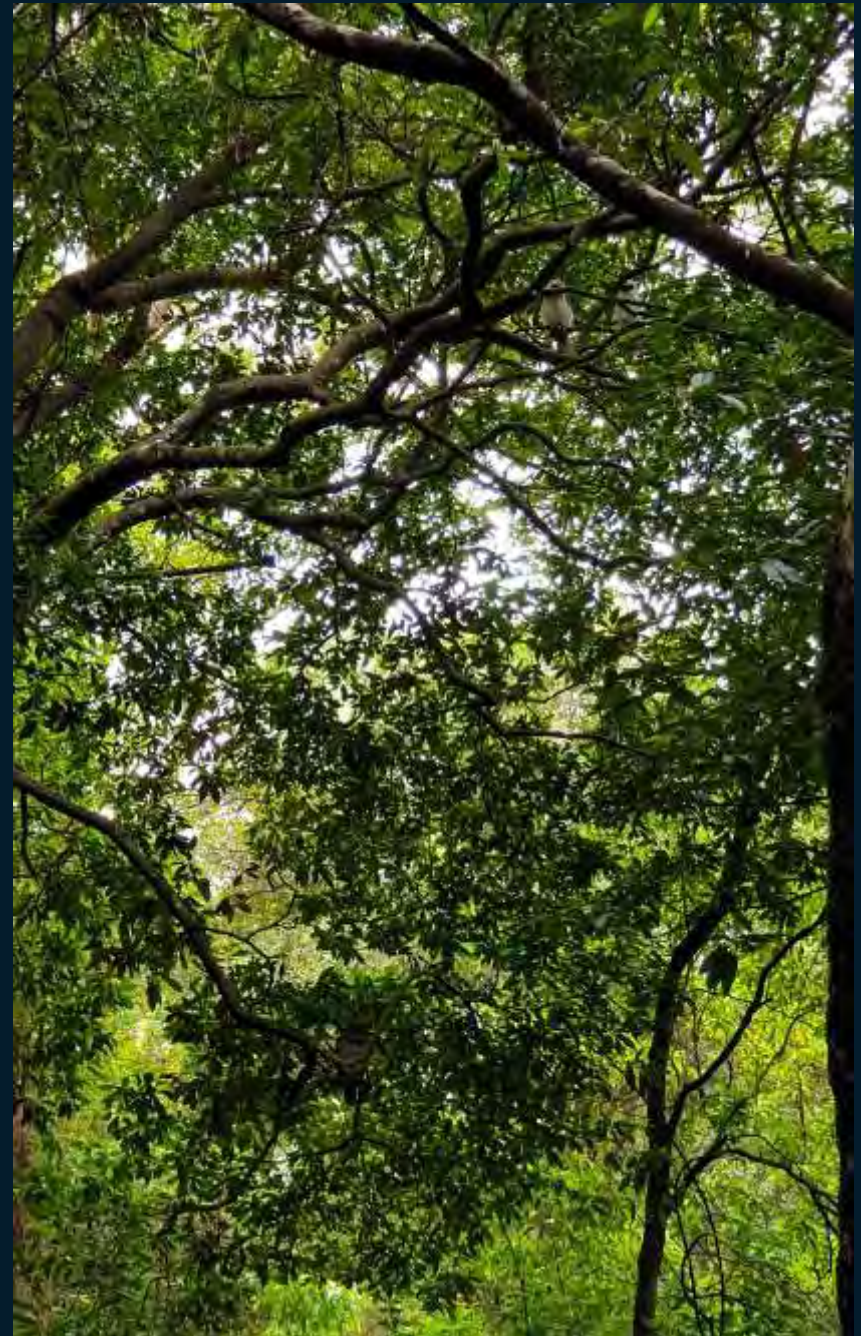


Photo: Aaron Banks

Green Corridors for Dispersal

- Study of shed feathers - sponsored by Kuringgai Council
- Genetic diversity is low
- One long range dispersal of over 100kms – the exception
- Distinct sub-populations confined to different regions of Sydney Basin
- Movement exposes the birds to threats
- Create green corridors to facilitate movement of the birds across Sydney



Photo: Aaron Banks

POs are raptors



Photo: Mick Carlsson

Photo: Brett Mezen



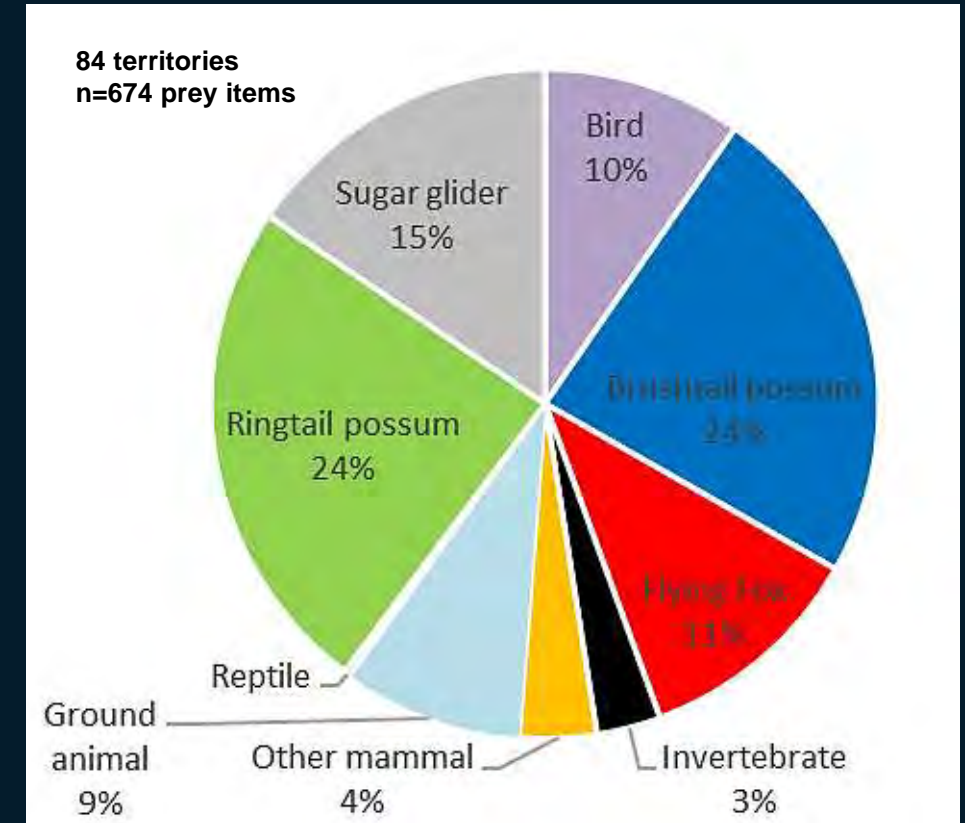
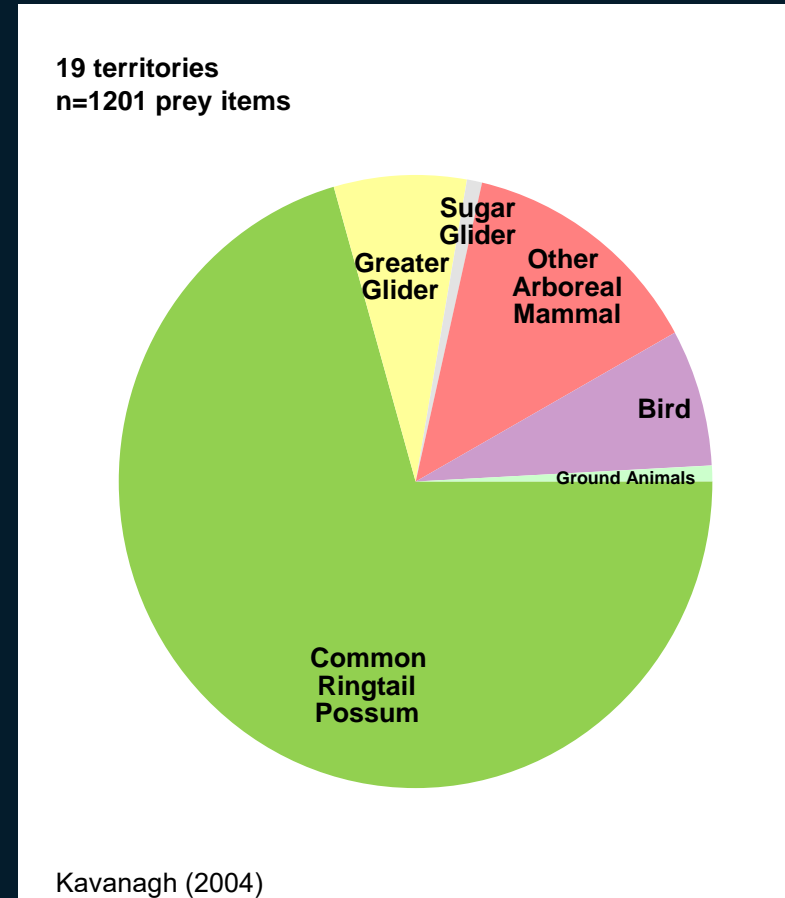
Photo: Chris Charles



What do Powerful Owls eat?

Prey items:

- ❖ Ringtail possum
- ❖ Greater glider
- ❖ Brushtail possum
- ❖ Sugar glider
- ❖ Flying fox
- ❖ Birds
- Brush turkey
- Cockatoo
- Rainbow lorikeet
- Currawong
- Magpie
- ❖ Rats
- ❖ Rabbits
- ❖ Invertebrates
- ❖ Reptiles
- ❖ Domestic cats



Do we have a stalker?

Signs that Powerful Owls have been in the neighbourhood

- Whitewash
- Pellets
- Shed feathers
- Possum intestines
- Disemboweled or headless possums
- Tufts of fur
- Feathers from prey species



Breeding Success in Sydney's Powerful Owls

- Fledging rate (*average number of owlets fledged per breeding attempt*) ranges between about 1 in a poor year to a little over 1.4 in a good year
- In 2021 – 164 owlets fledged; in 2022 – 83 owlets fledged
- So in 2022 – what went wrong?
 - ❖ Difficult conditions for monitoring
 - ❖ Lower number of pairs breeding (or more very early failures)
 - ❖ Higher rate of complete failure
 - ❖ Comparatively high number of hollows where only one owlet fledged
- Cause – wet weather
 - ❖ Wet (and sometimes flooded) hollows
 - ❖ Drop in prey numbers due to the big wet

Threats to Powerful Owls in Urban Areas

- Loss of habitat
 - Development – new and infill
 - Loss of nest trees – natural or human causes
 - Competition for hollows
 - Artificial night lighting
- Birdstrike: motor vehicle accident (MVA), glass strike, electrocution
- Land management practices
 - HRB
 - Bush regeneration
 - Asset maintenance – water and sewer pipes, high tension wires, fire trails etc
- Competing uses for natural areas
 - Mountain biking
 - Dog walking
- Second generation anticoagulant rodenticides (SGARs)
- Interspecies aggression

Unauthorised Mountain Bike Trails

- Failed breeding
- Abandonment of nest areas
- Swoopy birds



Motor Vehicle Accidents

- Responsible for the death of around 10% of the Sydney population annually
- Associated more strongly with higher speed limit roads
- Roads near golf courses and places where creeks pass under roads also appear to have higher rates of mortality
- Street tree plantings may be a factor – attract prey species
- Multiple reports of owls flying into the sides of vehicles
- Dead owls are often found with prey

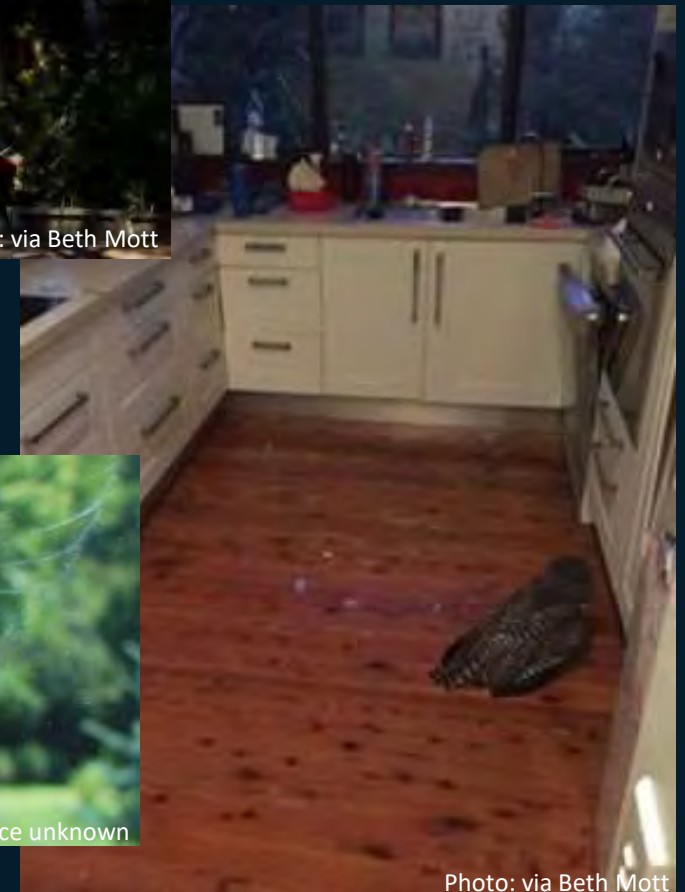


Glass Strike

The problem

Glass surfaces that create an illusion of an available flight path:

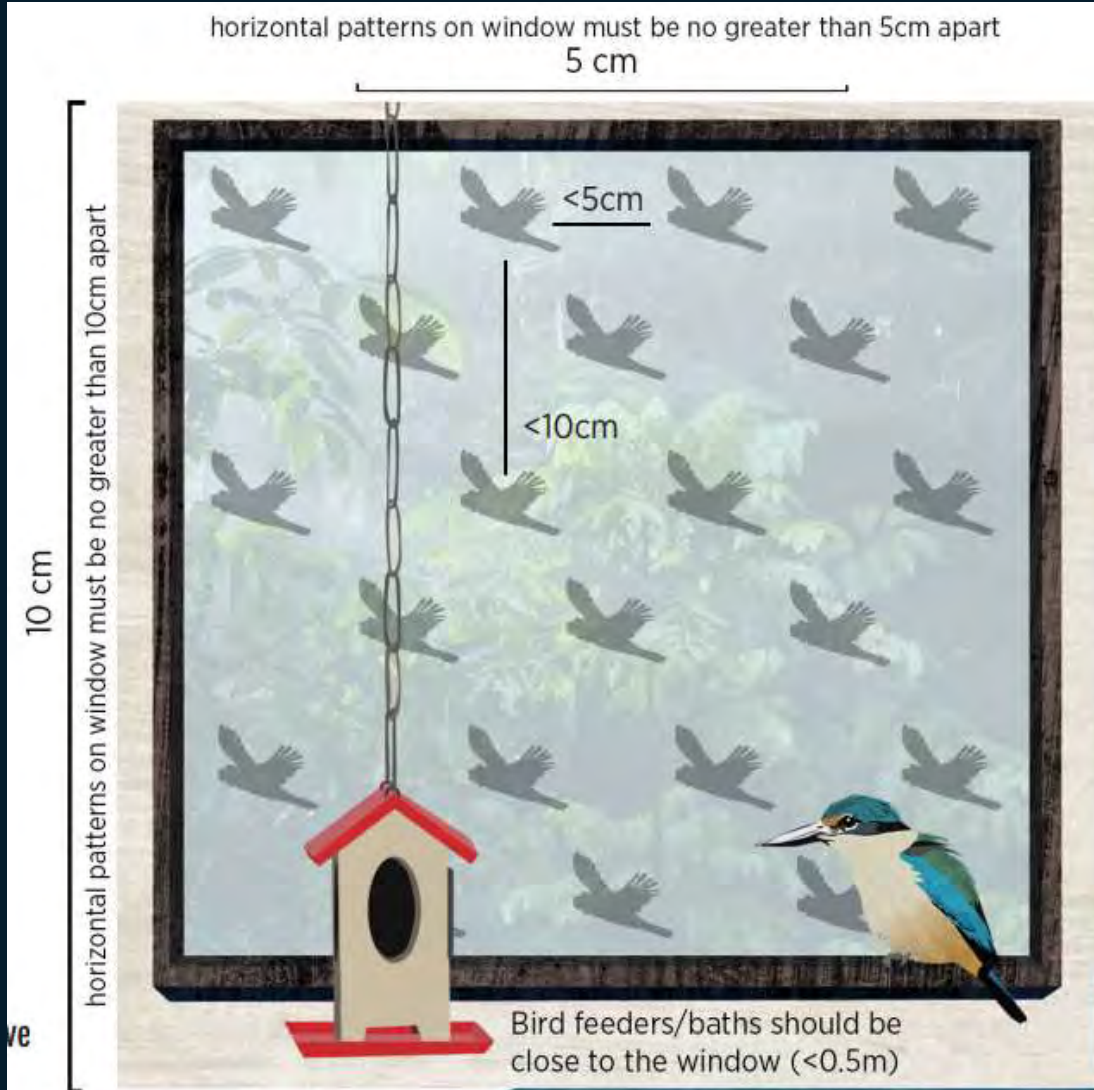
- Windows, glass balconies and pool fences that reflect the sky or vegetation
- Line of sight through two sets of windows to the other side of a building



What can we do to help prevent glass strike?

Some of these measures help to prevent glass strike. Others reduce the likelihood of fatality.

- Choose vertical blinds over roller blinds
- Turn lights off at night in unused rooms or close curtains/blinds
- Reduce vegetation around windows
- Position birdfeeders or birdbaths closer than 0.5m to the window to avoid high speed collisions
- Keep your windows a bit dirty
- Break up the reflective surface with a repetitive pattern
- When replacing windows, avoid reflective coatings and include bird friendly patterns
- Consider installing a vertical cord system such as Acopian BirdSavers – see birdsavers.com/make-your-own/ for instructions

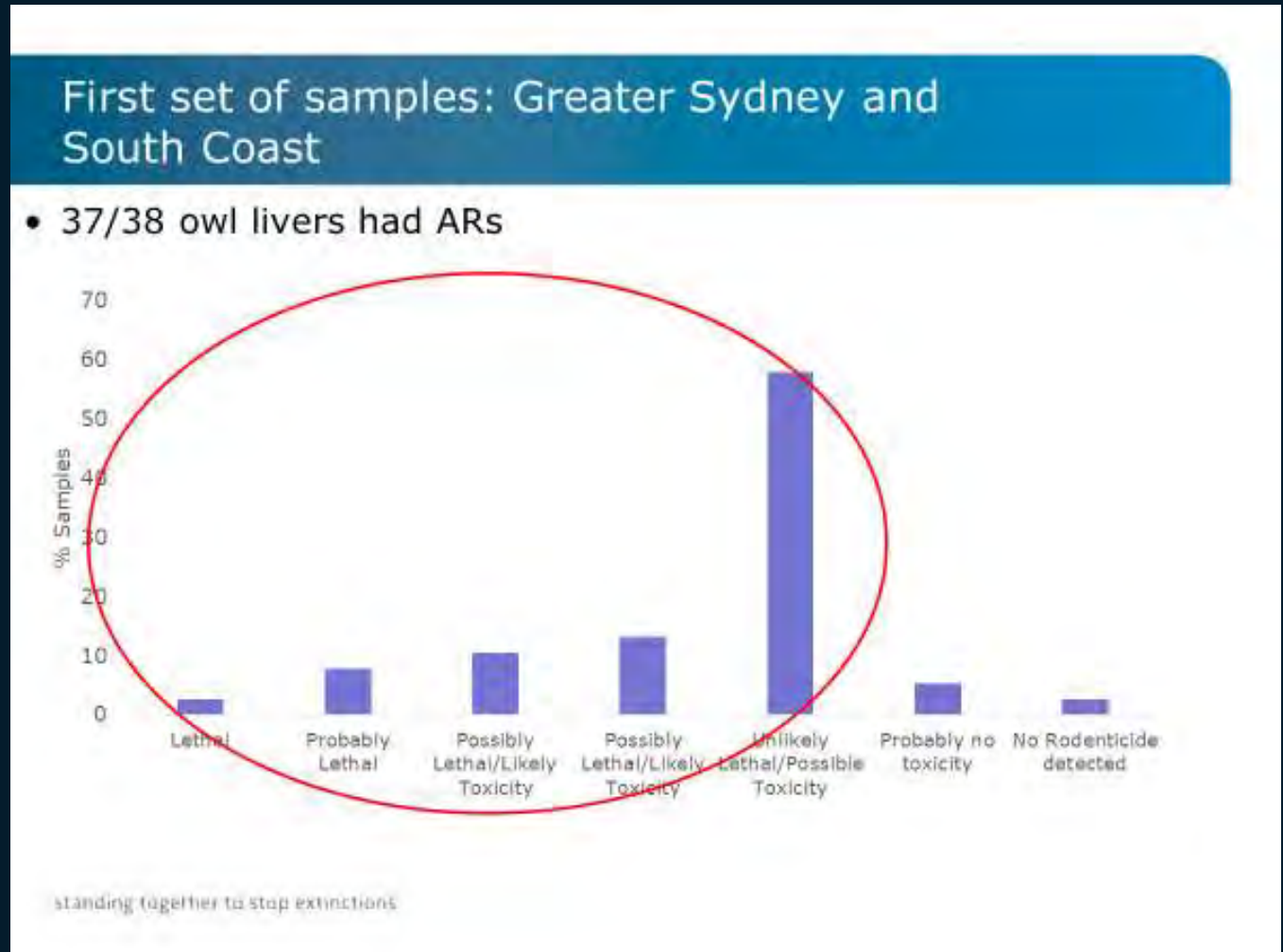


Window pattern – gap size is important

Acopian BirdSavers

Anti-Coagulant Rodenticides

- Effectively blood thinners
- “first generation” FGARs
multiple dose: warfarin, coumatetralyl, diphacinone
Break down in body fast
- “second generation” SGARs
single dose: difenacoum, brodifacoum, bromadiolone and difethialone.
Accumulates in liver and slow to break down
- Most off the shelf baits are SGARs – beware!



A Quick Word on Nest Boxes

Only known records of successful breeding of Powerful Owls in human built or modified structures:

2007 – nest box in Victoria

2022 – relocated hollow section of tree, Victoria; nest box in NSW

2023 – looking promising!



Things you can do to help

- Avoid using second generation anticoagulant rodenticides (SGARs)
- support prey species
 - Plant diverse gardens
 - Aerial highways for ringtails
 - Nest boxes for possums
- Let your local politicians know that wildlife and habitat conservation are important to you
- Support groups that campaign for wildlife and conservation
- Take measures to minimise glass strike
- Advocate for the retention of hollow bearing trees
- Encourage tree planting for the owls of the future
- Avoid artificial lighting at night if not necessary
- Report PO sightings to us or enter sighting into Birdata (app or desktop)
- Volunteer to monitor Powerful Owls!



Tips to remember if you come across an owl

- The owl sees you as a predator – a threat
- Quietly observe from a distance for a short time, then move on
- Resist the urge to return to the same place any time soon
- Don't publicly share the location of the owl
- Avoid using flash photography or bright white light
- Do not approach nest trees in breeding season
- Let us know where and when you saw the owl
- If you come across an owl on the ground and it doesn't fly away as you approach, call Sydney Metropolitan Wildlife Services or WIRES for advice – raptor rescue requires specialist training – they will send a rescuer if they believe it is needed – both are available 24/7



If you'd like to monitor owls...

- Come and say hi after the talk
- Send me an email and I'll send you the rego forms
- Send me back the completed forms
- I'll send you links to recorded training sessions, plus other training resources
- Once you've watched them, we'll get you out looking for owls.

powerfulowl@birdlife.org.au

Thank you

BirdLife Australia is leading the way in bird conservation.

Today, we are proud to be Australia's largest bird conservation charity, made up of hundreds of thousands of members, volunteers and supporters across the country.

We work locally, nationally and globally to drive the recovery of threatened birds, restore nature and stop extinctions. Science and our supporters are vital ingredients in achieving our goals.

We collaborate with leading experts, partner with landholders, lobby governments and meet with schools and communities — and more — **to protect Australia's** birds and their habitats and stop bird extinctions.