Overview of TasNetworks Threatened Bird Strategy and incident trends

Updated 6 December 2022

TasNetworks Threatened Bird Strategy

Our principles

- We encourage incident reporting and report our impact openly and transparently
- We take timely action to reduce the risk of future incidents
- We implement cost effective, risk-based measures to make our electricity infrastructure progressively safer for threatened birds
- We work collaboratively with all of our key stakeholders
- We support strategic protection and conservation actions which support long-term population viability

Aim: A sustained material reduction in our impact on Tasmania's threatened birds

Our priorities 2022-2032

Build knowledge and awareness

- Maintain community awareness and engagement
- Collaborate effectively with key stakeholders
- Investigate incidents and collect accurate, reliable and timely data
- Promote research and knowledge sharing

Mitigate our impact and monitor effectiveness

- Action timely incident response mitigation
- Roll-out a bird friendly over head network design
- Reduce strike-risk on the existing network
- Evaluate mitigation effectiveness

Support strategic protection and conservation actions

- Support coordinated action to protect threatened birds species
- Help improve estimates of eagle populations in Tasmania
- Support statewide raptor care and rehabilitation capacity

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Which threatened bird species are impacted?

The Tasmanian wedge-tailed eagle (*aquila audax fleayi*) is a subspecies of the mainland wedge-tailed eagle and only occurs in Tasmania. It is Australia's largest bird of prey and can be identified by its wedge-shaped tail

In Tasmania, the grey goshawk (*accipiter novaehollandiae*) is a large, pure white raptor, which is visibility distinct from the mainland variety (grey morph). Females are almost twice as heavy as males.

The white-bellied sea eagle, (*Haliaeetus leucogaster*), is a large, mostly white bird of prey with broad greyish wings and a short pale wedge-shaped tail. Sub-adults are speckled slaty brown and can be confused with wedge-tailed eagles

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Why is managing our impact on threatened birds important?

Managing business risks

TasNetworks impact on listed threatened species is one of the businesses most significant environmental, reputational and compliance risks. These risks need to be managed in line with business, regulator and community expectations.

Powering a bright future

Maintaining biodiversity and ecosystem function

Birds of prey are apex predators, critical for maintaining ecosystem function and health. They help to maintain the population levels of other species within sustainable levels (particularly invasive species)

Meeting our social responsibilities

Protecting our iconic threatened bird species is the right thing to do and intrinsically linked to our purpose of '…powering a bright future'

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Maintaining community awareness

A flapping good idea

We love Tassie's big birds. That's why we're putting flappers like these on our powerlines – to keep threatened birds like the Tasmanian wedge-tailed eagle out of harm's way.

Keep an eagle eye out for our TasNetworks team installing flappers, safe perching platforms and extra safety insulation to powerlines and conductors around the state.

If you find a bird of prey injured or killed near our powerlines, please call us on 132 004

TasNetworks | Powering a Bright Future

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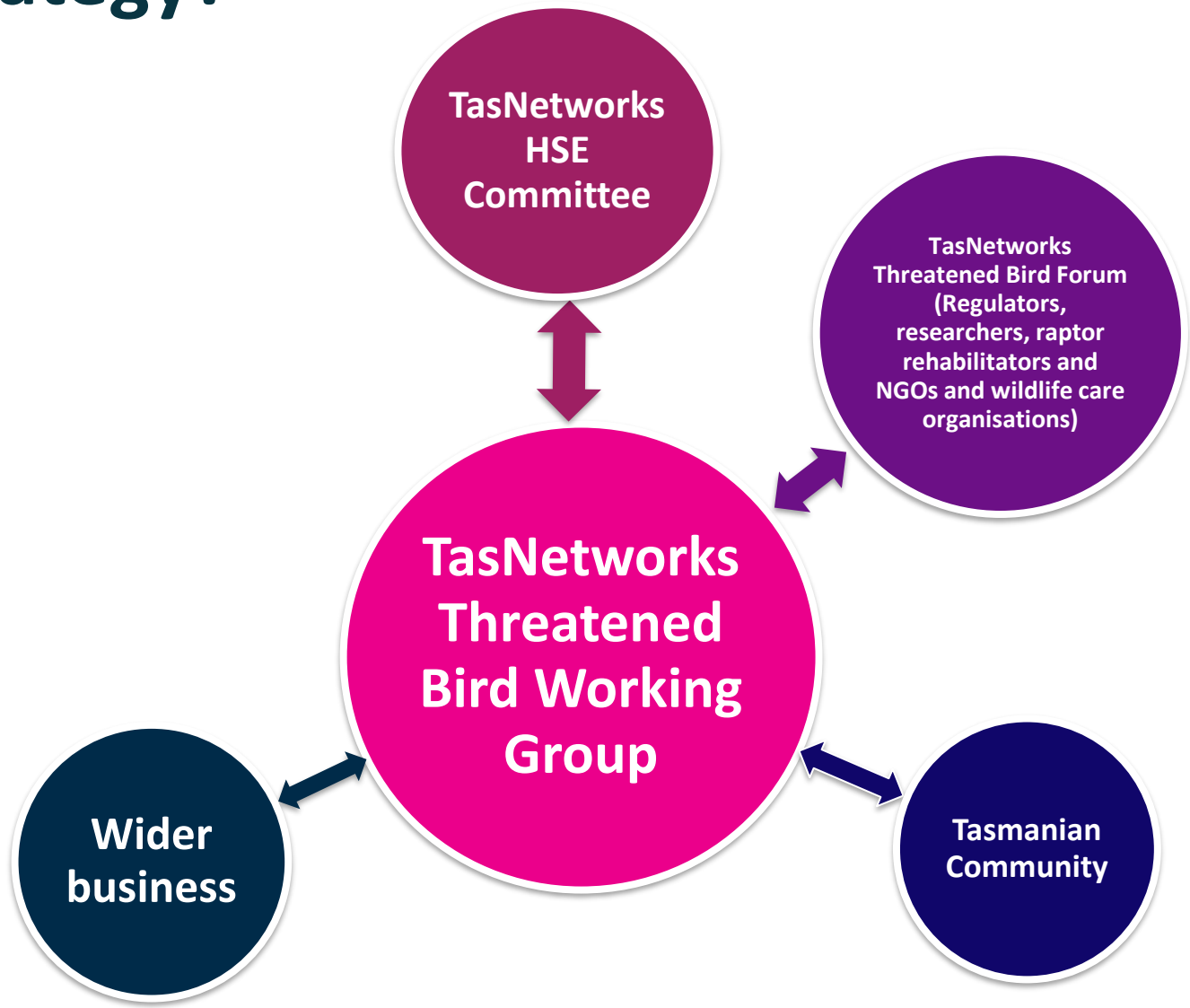
Who's responsible for delivering the Threatened Bird Strategy?



Working collaboratively with key stakeholders

The implementation and execution of TasNetworks Threatened Bird Strategy is built on successful collaboration and strong working relationships between key internal and external stakeholders. This collaboration has been underpinned by a clear framework for maintaining accountability and support. Sharing new learnings, feedback and research, has helped to ensure that the aims of the strategy are front of mind and remain fit for purpose.

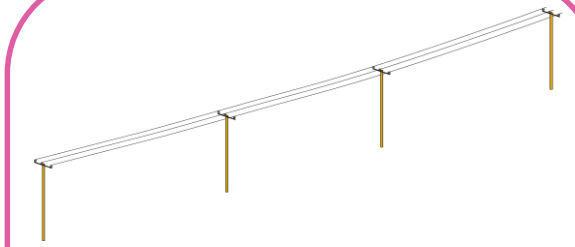
TasNetworks Threatened Bird Working Group are the custodians responsible for the delivery of TasNetworks Threatened Bird Strategy. They meet on a regular basis to ensure that the objectives and initiatives described by the strategy are being achieved.

The **TasNetworks HSE Committee** provides high-level direction and support to the Threatened Bird working Group. They meet on a monthly basis or as needed.

The TasNetworks Threatened Bird Forum meets around every 6 months. The forum seeks to foster constructive working relationships with the aim of sharing information, research and feedback to improve the protection and conservation of Tasmania's threatened bird life.

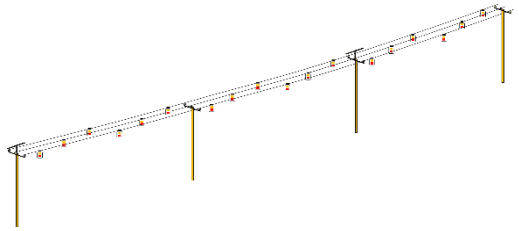
How is TasNetworks making the network safer for threatened birds?

Pre-2017



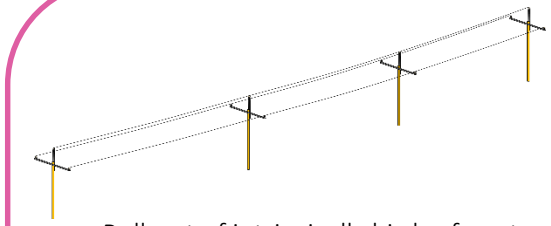
- <1% of high-risk network mitigated (bird flappers only)
- Additional bird diverters installed on an ad hoc basis, primarily to address reliability issues
- Some mitigation installed in response to incidents, primarily steel lattices poles

Current



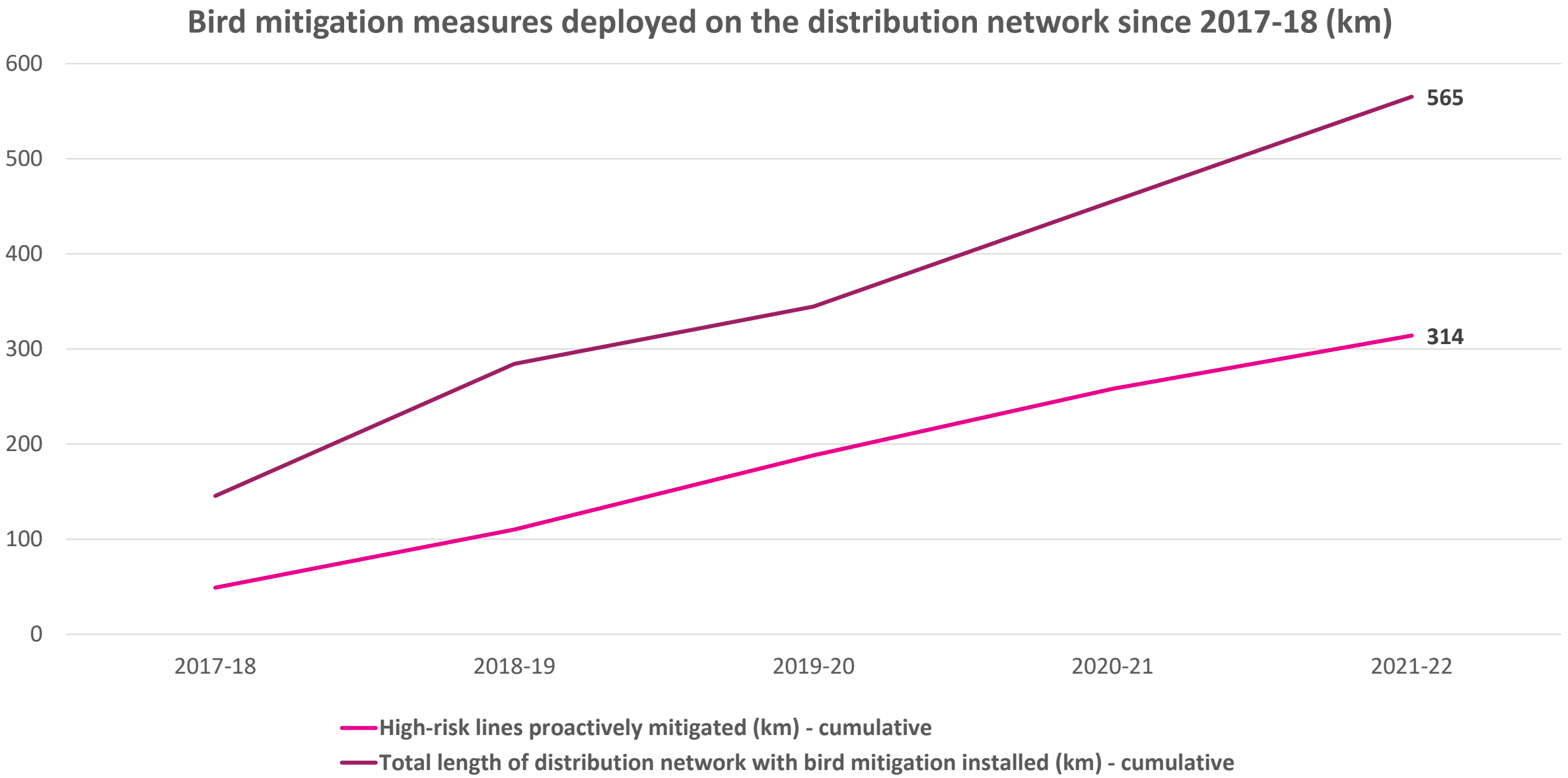
- >5% of the distribution network mitigated, primarily bird diverters
- Dedicated proactive bird mitigation program installing bird diverters on high-risk network in place since 2017 (around $1m spent per annum)
- Mitigation installed in response to all reportable threatened bird incidents
- Mitigation required for new electricity infrastructure in high-strike risk areas

2022 and beyond

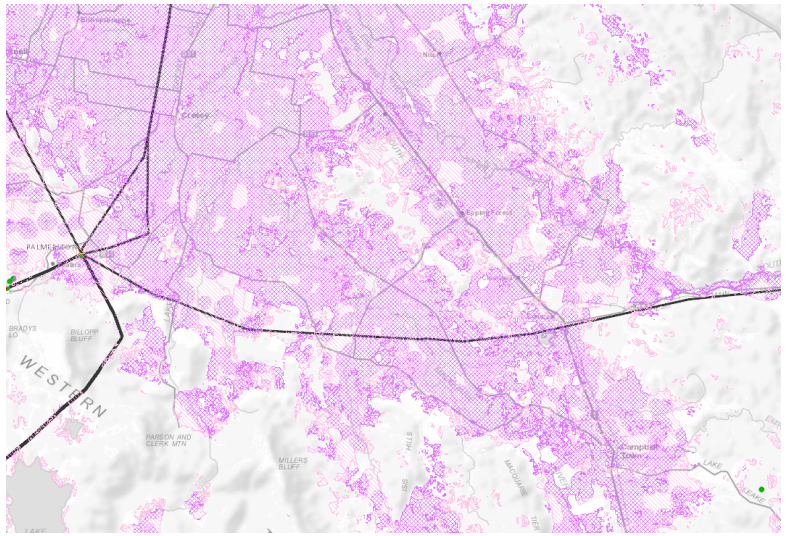


- Roll-out of intrinsically bird safe network design standard (delta with fibreglass cross arms)
- Continuation of dedicated proactive mitigation program (combination of bird diverters and delta)
- Mitigation rolled-out during the upgrade and replacement of existing assets
- All new network to comply with bird safe overhead design standard

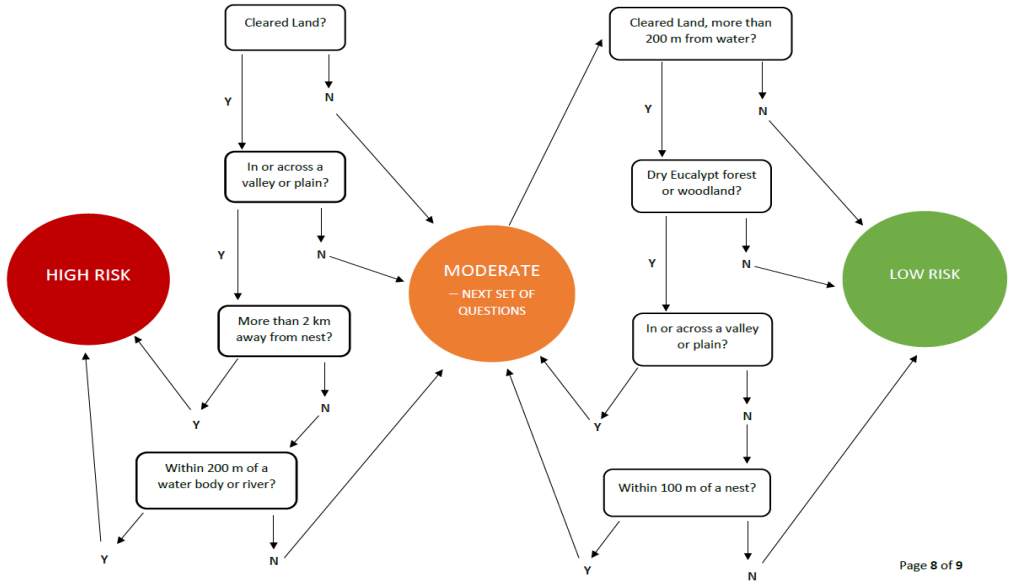
Recent progress: Ramping-up the deployment of bird mitigation



How do we prioritise proactive bird mitigation?



Eagle Strike Risk Model – NetMaps layer



Eagle Strike Risk Model – decision tree

TasNetworks is applying a risk-based approach to installing bird mitigation on the distribution network

We are focussing on reducing strike risk for wedge-tailed eagles, who are primarily electrocuted mid-span

Within the constraints of a fixed budget, our objective is to maximise the reduction in total risk per dollar spent

By mitigating very-high strike risk areas, we'll reduce total network risk as rapidly as possible

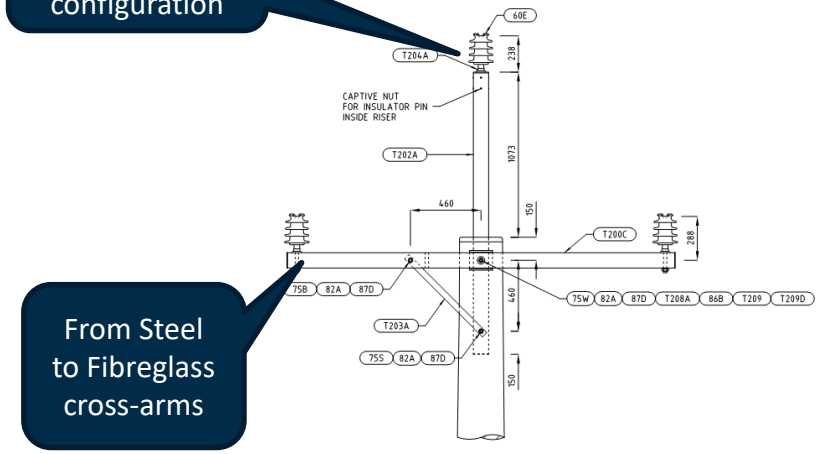
Selection of sites for proactive mitigation is informed by historic incidents and the eagle strike risk model

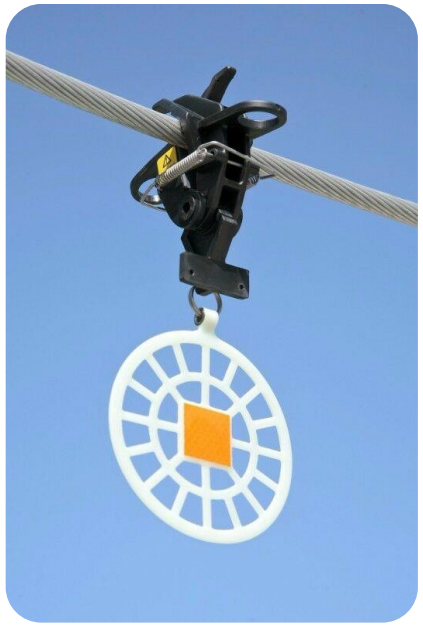
TasNetworks is continually refining its understanding of risk and effectivness to ensure mitigation is deployed strategically

Current bird mitigation measures

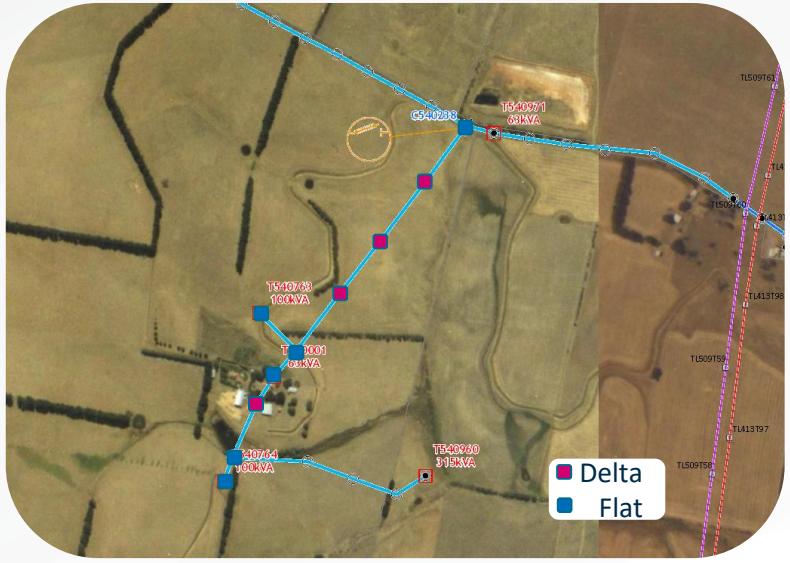
From Flat to Delta 3-wire configuration

From Steel to Fibreglass cross-arms





First Fibreglass Delta Installation

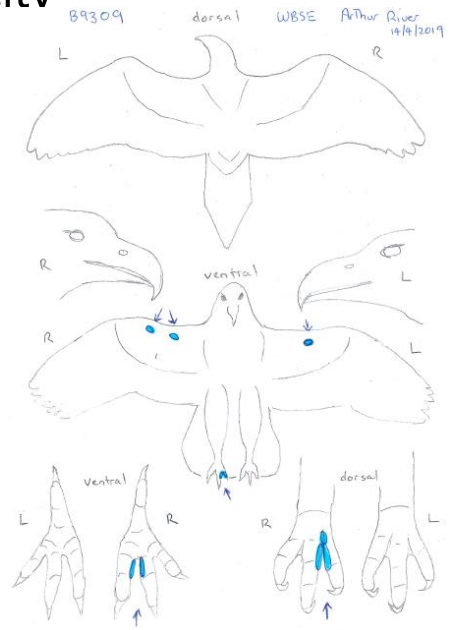


Our partnerships - TMAG: supporting specimen processing, storage and research

TasNetworks is providing TMAG $50,000p.a over three years to fund a part-time technical officer to process bird specimens as well as an ultra-cold freezer to increase specimen storage capacitv

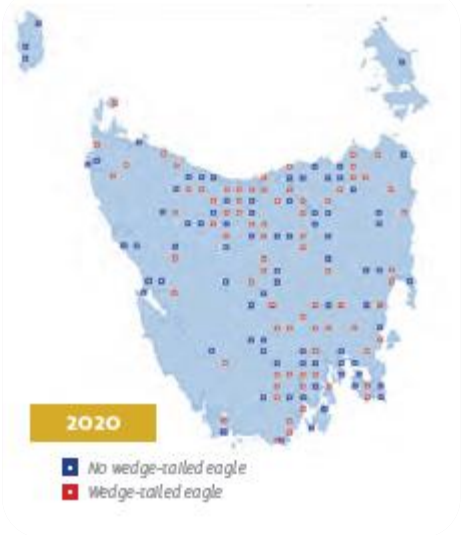
Benefits

- Validate and confirm cause of death (consistent with our Incident Determination Guide)
- Improve incident data and transparency of reporting
- Collect detailed specimen data for future research and analysis
- Confirm interaction pathway for incidents i.e. electrocution, mid-span vs. pole top
- Uplift broader specimen processing capacity and knowledge at TMAG
- Help understand mitigation effectiveness
- Validate network design changes (delta)
- Supports wider research and conservation efforts (i.e. impact of lead, rodenticide, pathogens etc.)



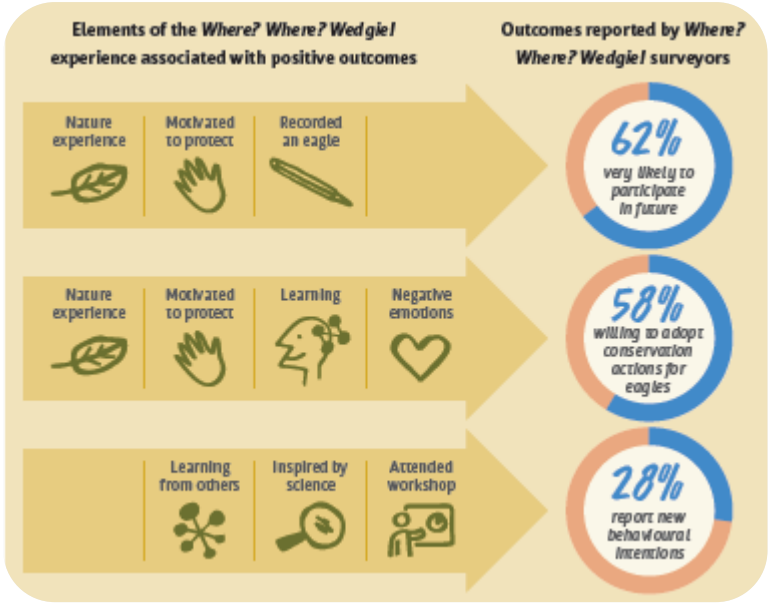
Our partnerships - Nature Trackers: supporting citizen science and research using eagle trackers

TasNetworks are providing $50,000p.a. for three years to support the citizen science survey Where? Where? Wedgie! - and Dr James Pay's research which included tracking wedge-tailed eagle movement using GPS tags.



Benefits

- Capture data to understand how eagle populations are changing (are our (TNs) efforts making a difference?)
- Improve data collection and integrity
- Activate and engage the Tasmanian community and TasNetworks team members in scientific endeavour
- Build bird ID skills and awareness
- Help refine the TN eagle strike risk model
- Supports wider research and conservation efforts (i.e. impact of lead, rodenticide, pathogens etc.)
- Positive communications and engagement
- Raise public awareness and need to report incidents

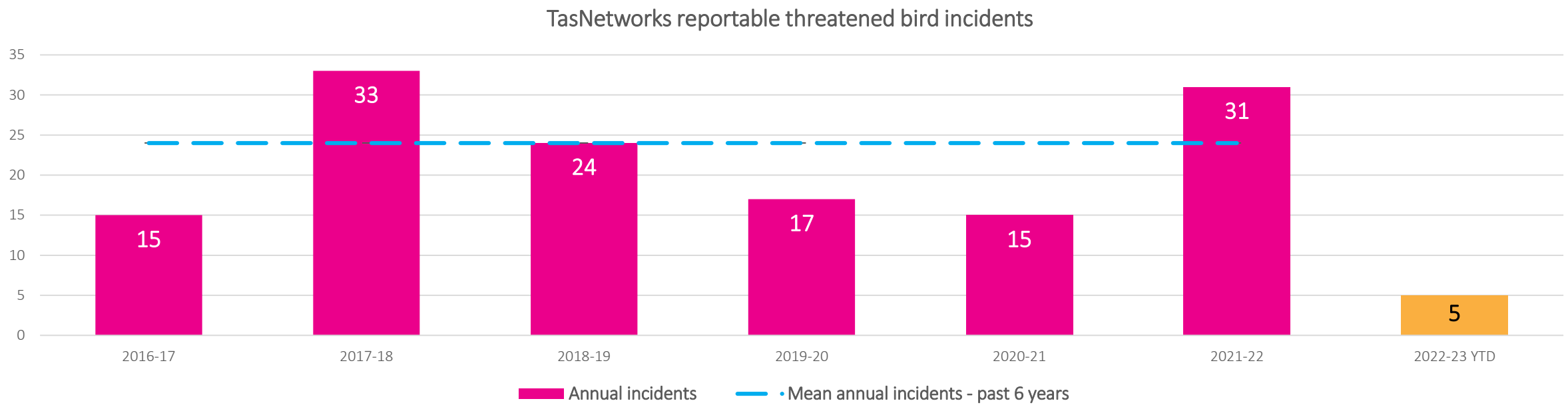


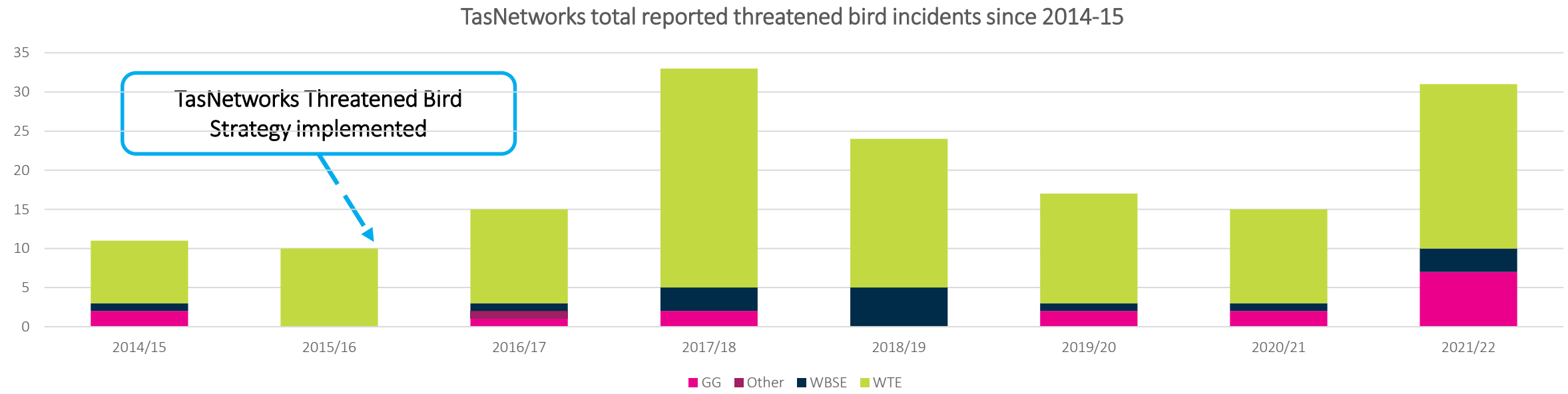
Continuing support for rescue and rehabilitation

Recent support for Raptor Refuge:

- Funding for bushfire mitigation and suppression system $25,000
- Materials and construction support for new aviaries
- 5 year joint funding for on site resourcing ($13,500 p.a.)

TasNetworks reported incidents: overall, no clear long-term trend…





What drives changes in annual incidents? – four key factors

Report a wildlife incident

If you're aware of an incident involving a threatened species, please call us on 132 004 immediately, in addition to filling out this form. Threatened species include Wedge-tailed eagles, White-bellied sea eagles and grey goshawks.

- Changes in total population overtime
- \+
- Notification of suspected incidents
- \+
- Roll-out of bird mitigation measures
- \+
- Random variability

→ **Total annual incidents**

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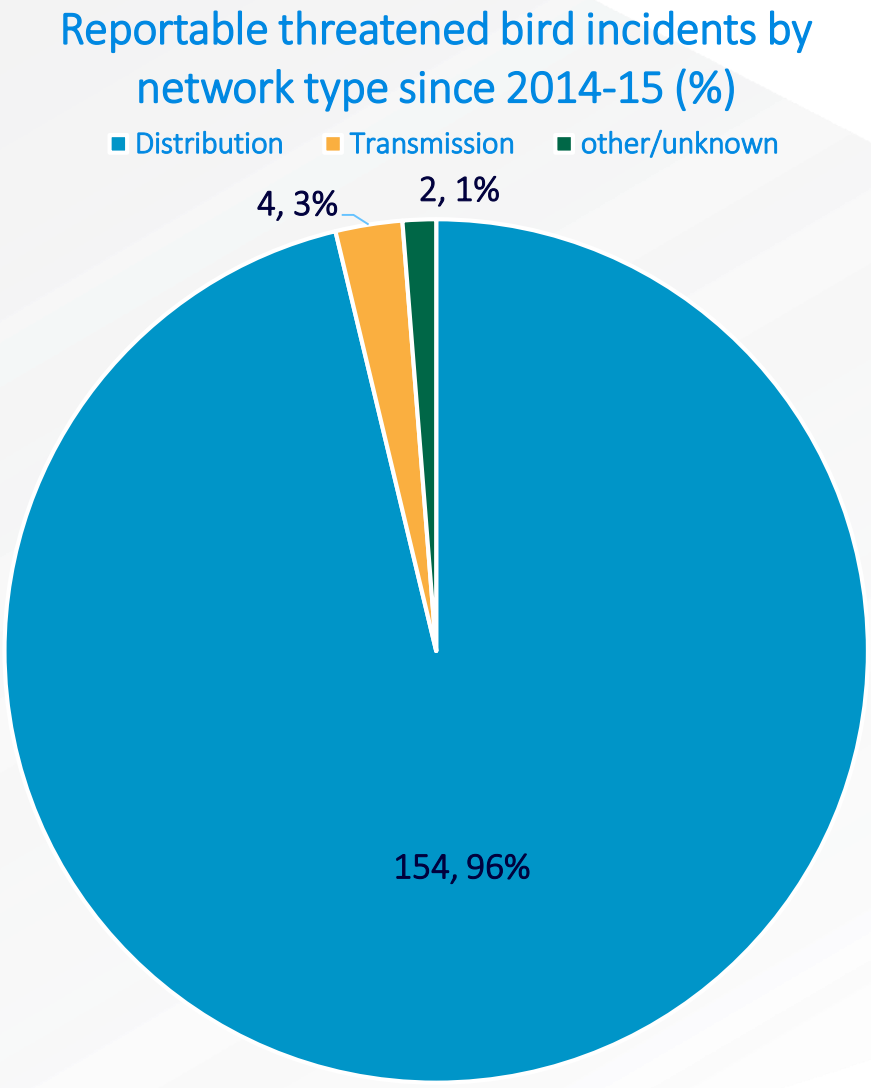
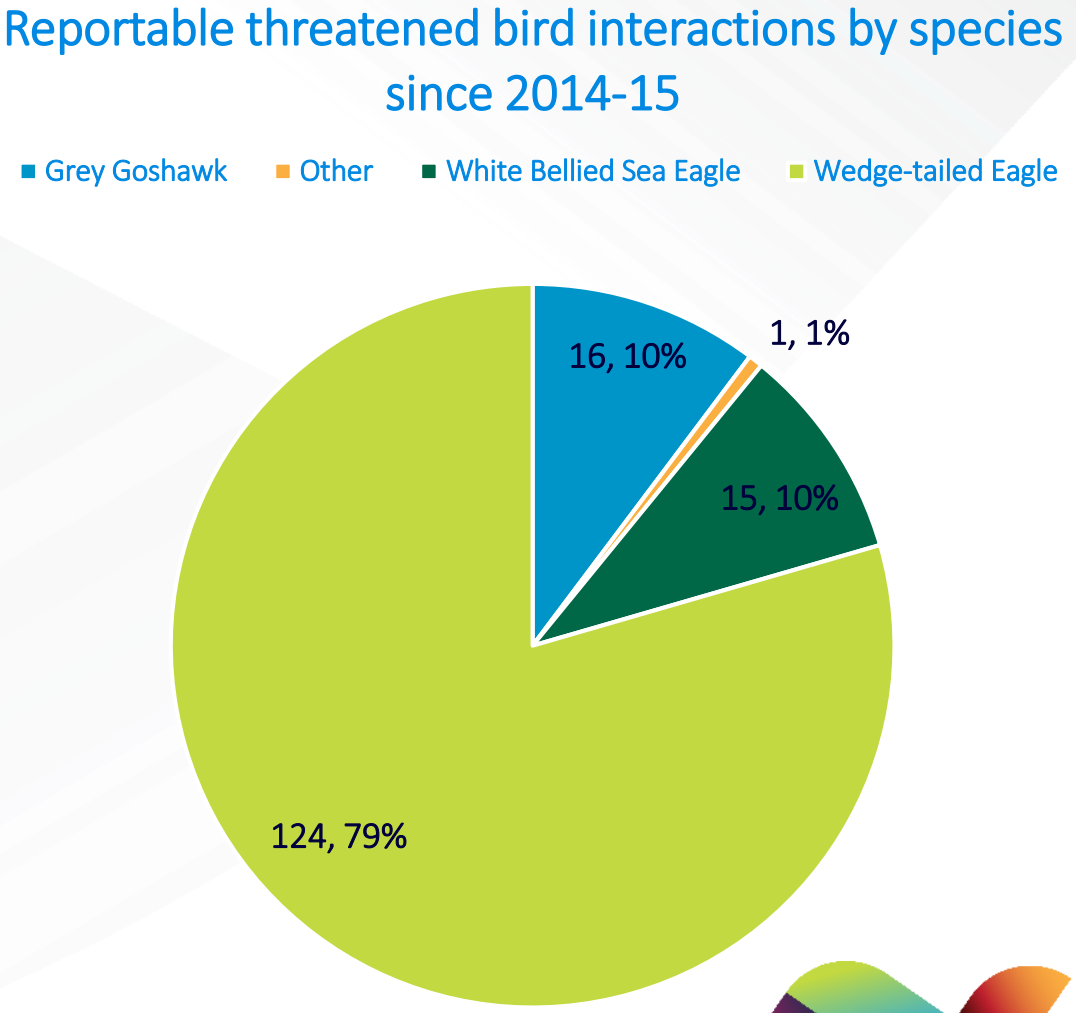
What we're learning: wedge-tailed eagles are most impacted on the distribution network





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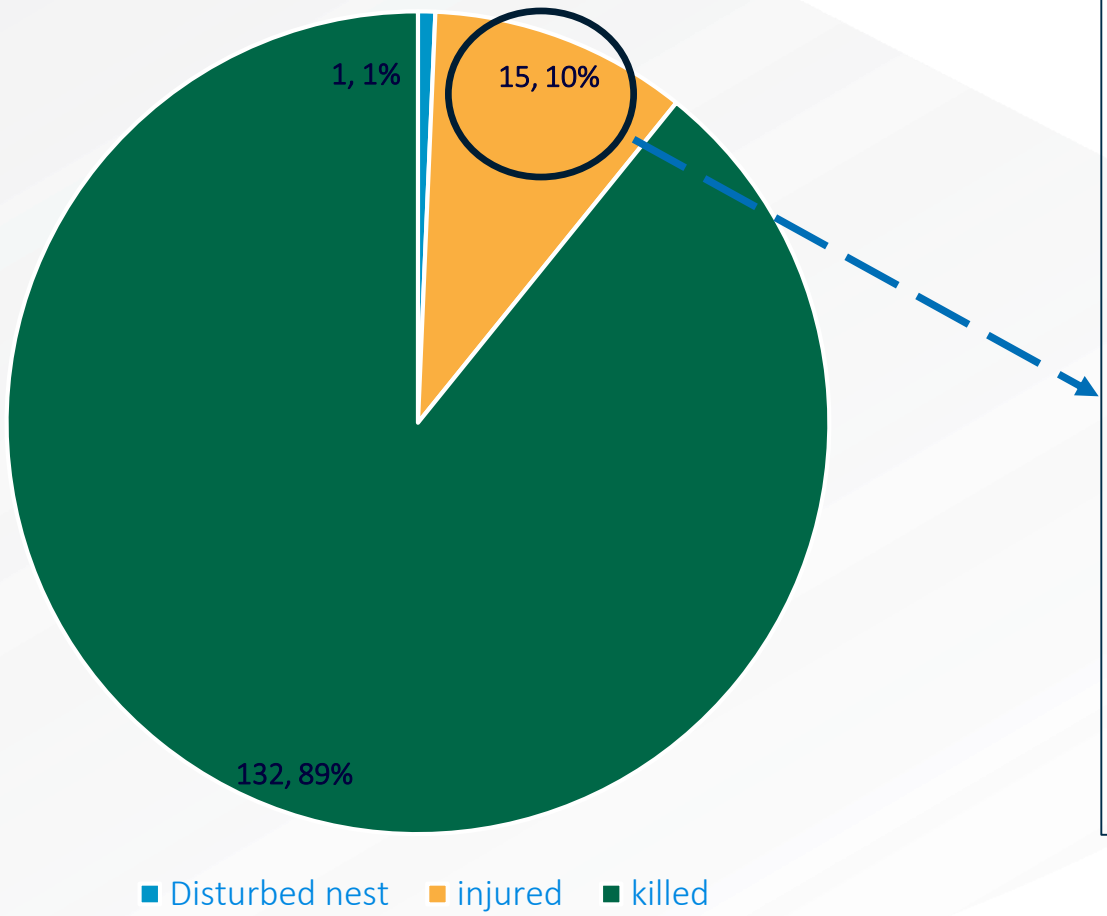
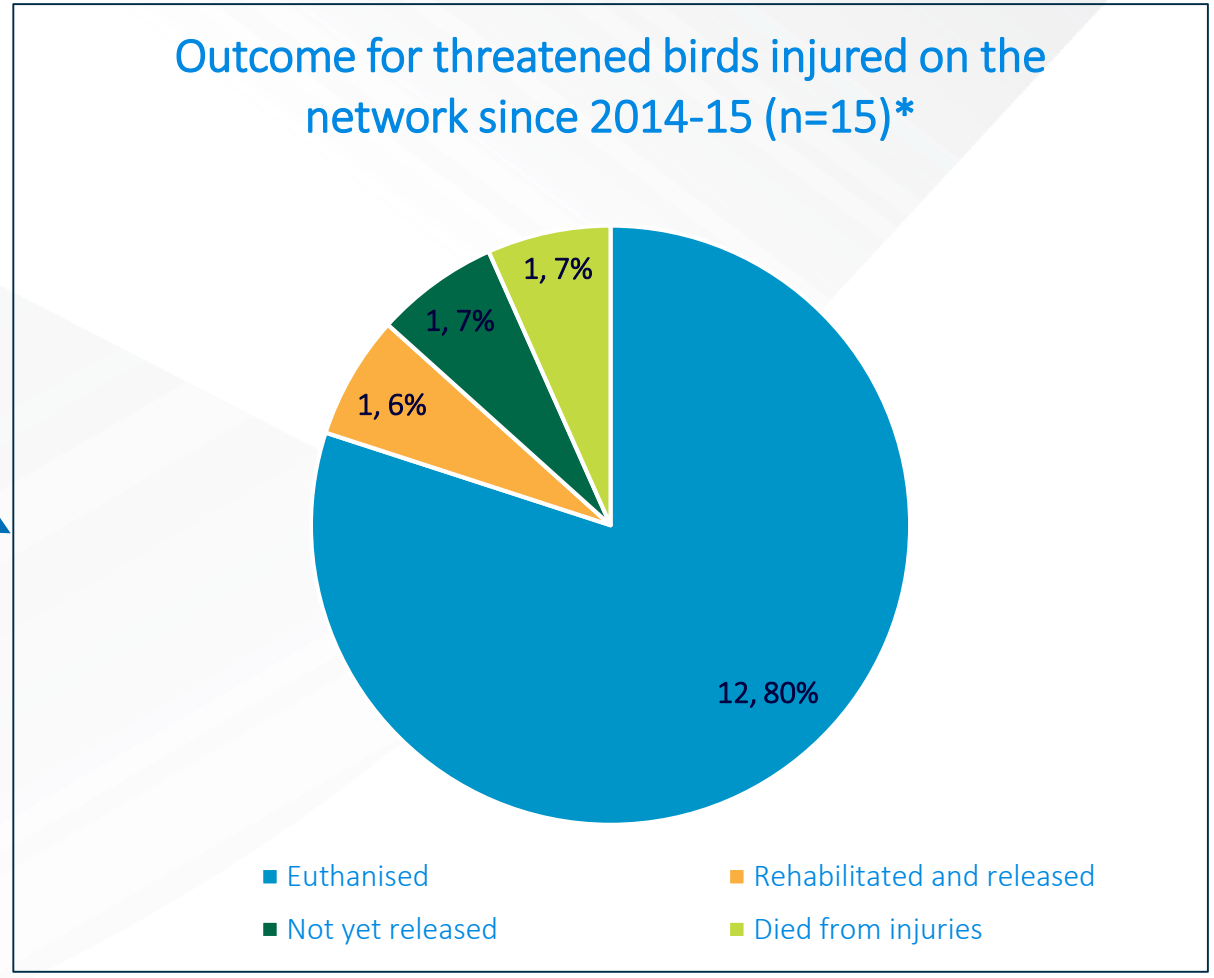
Outcomes for birds injured by electricity infrastructure

Reportable Threatened Bird incidents - Deaths vs injuries since 2014-15 (n=156)*



Outcome for threatened birds injured on the network since 2014-15 (n=15)*



***TN reportable incidents only**

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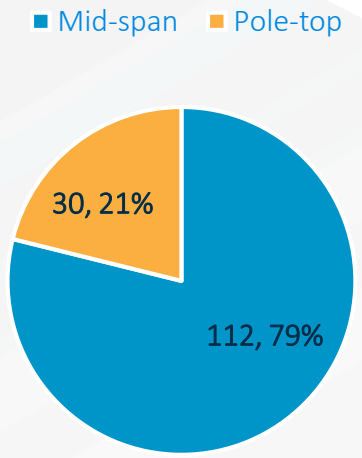
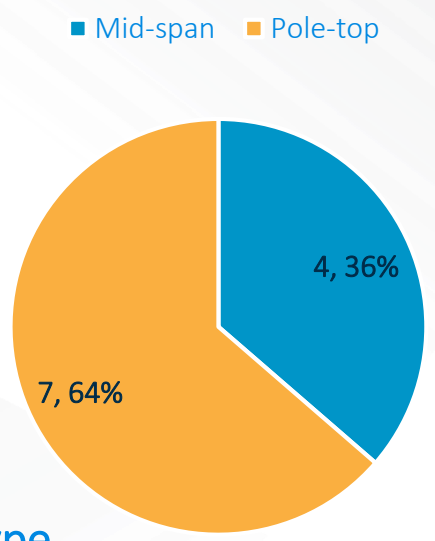
What we're learning: threatened bird species are impacted by the network differently

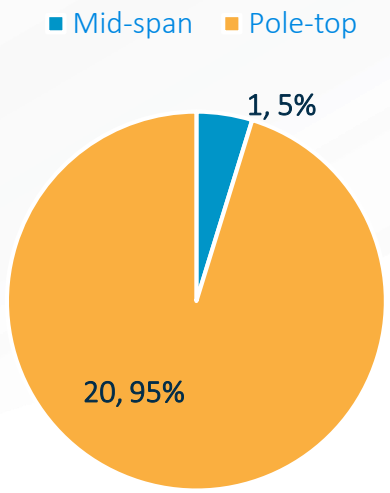
Wedge-tailed Eagle Incidents - by incident cause type



White bellied sea Eagle Incidents - by incident cause type (%)



Grey goshawk Incidents - by incident cause type (%)



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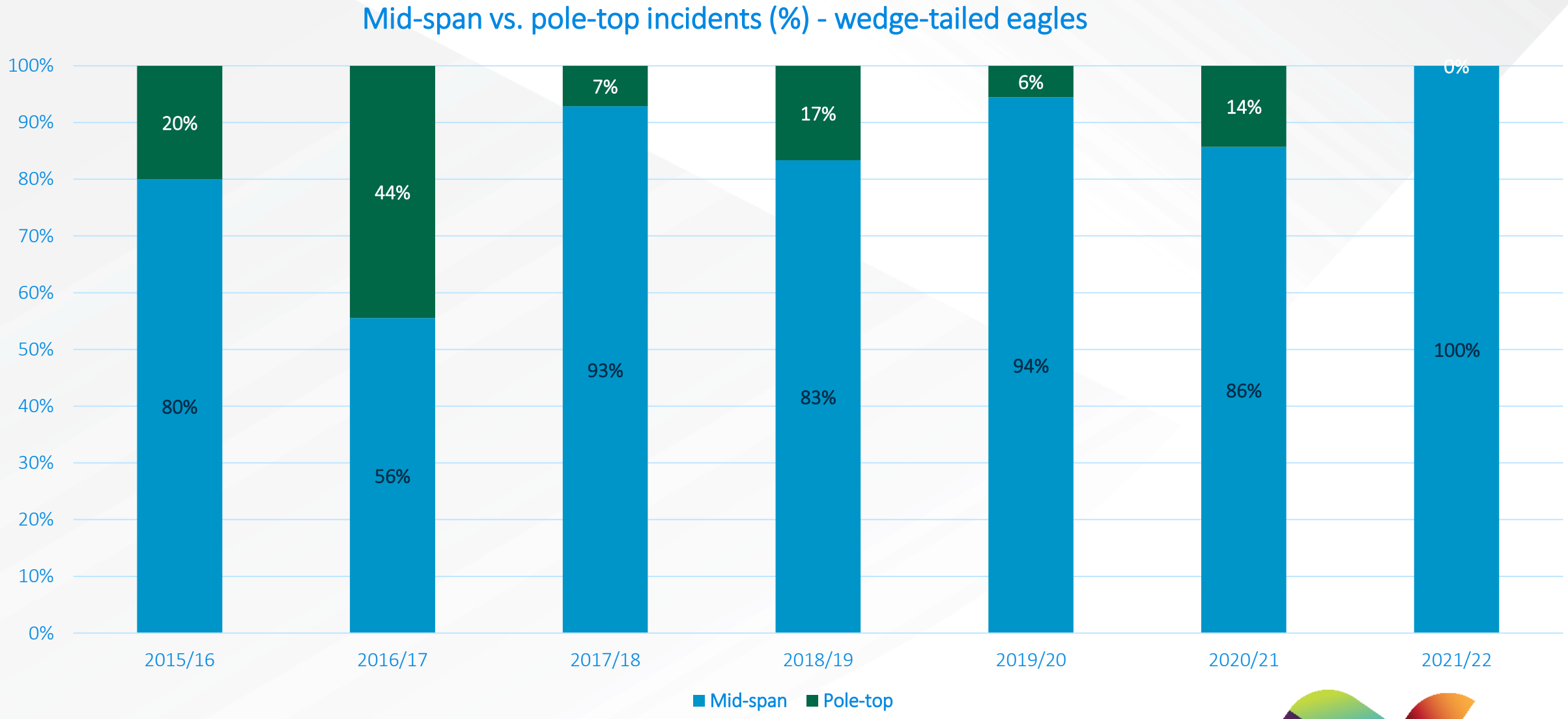
What we're learning: wedge-tailed eagles are primarily impacted mid-span



Mid-span incident: Bird likely injured or killed away from pole (bird found on-ground between poles – more than 2m away from pole base - or entangled in conductors)
Pole-top incident: Bird likely electrocuted or injured (electric shock) while perching on a pole-top (bird found immediately at pole base)

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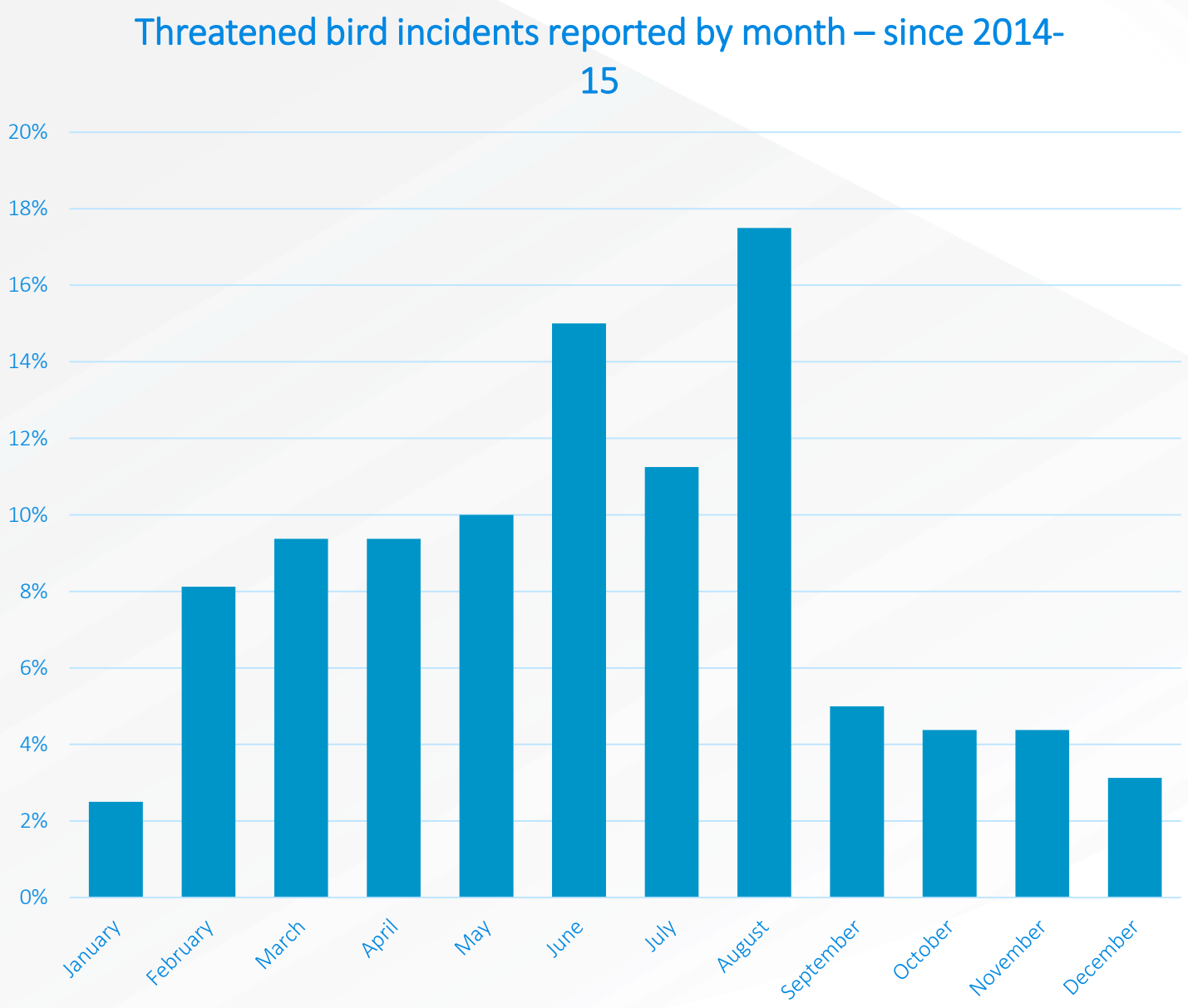
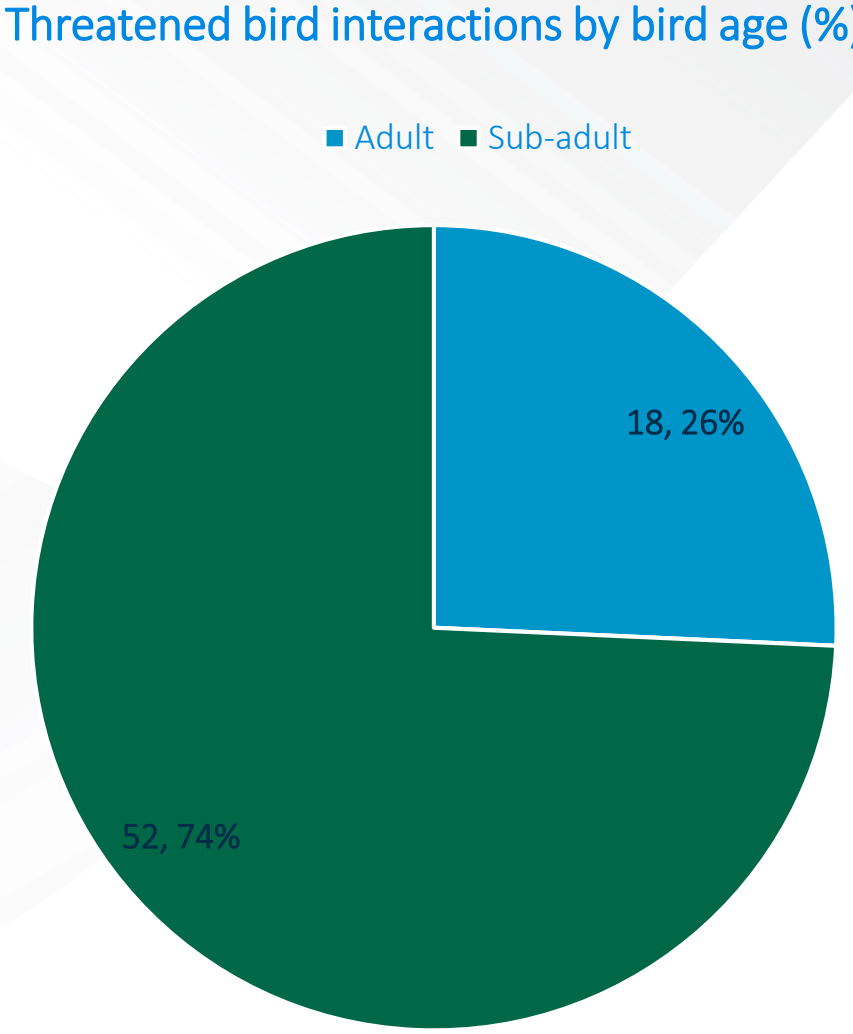
What we're learning: sub-adults birds are most at risk during the colder months





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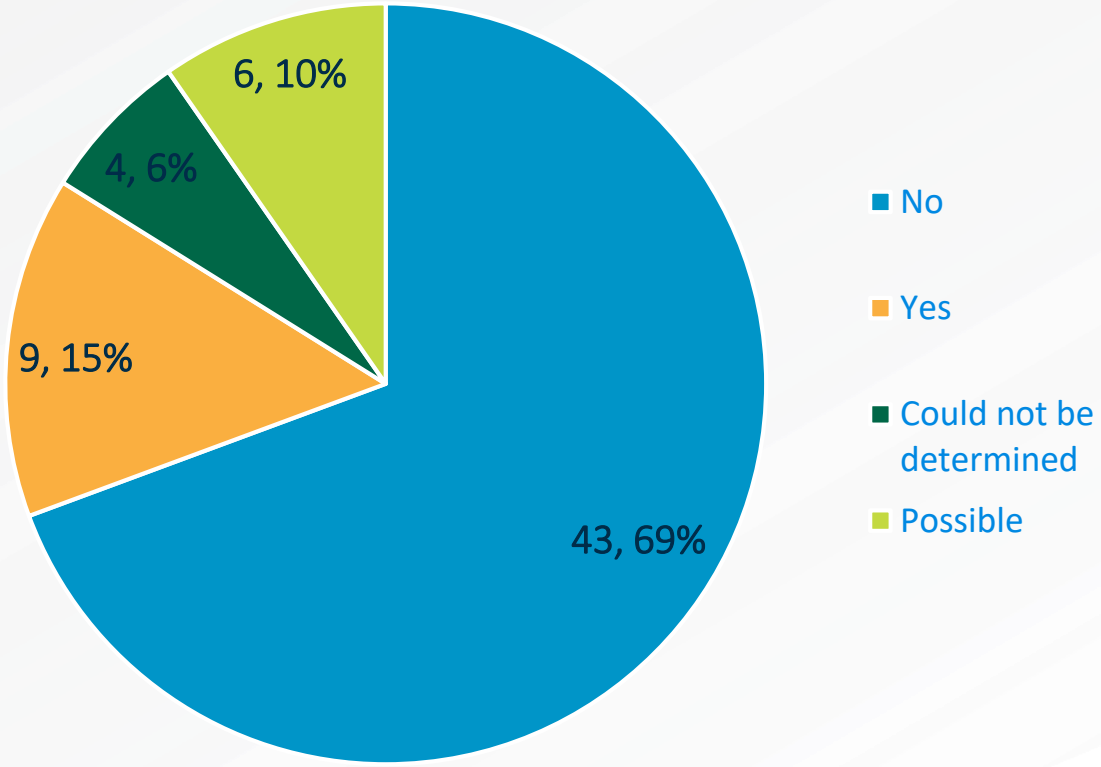
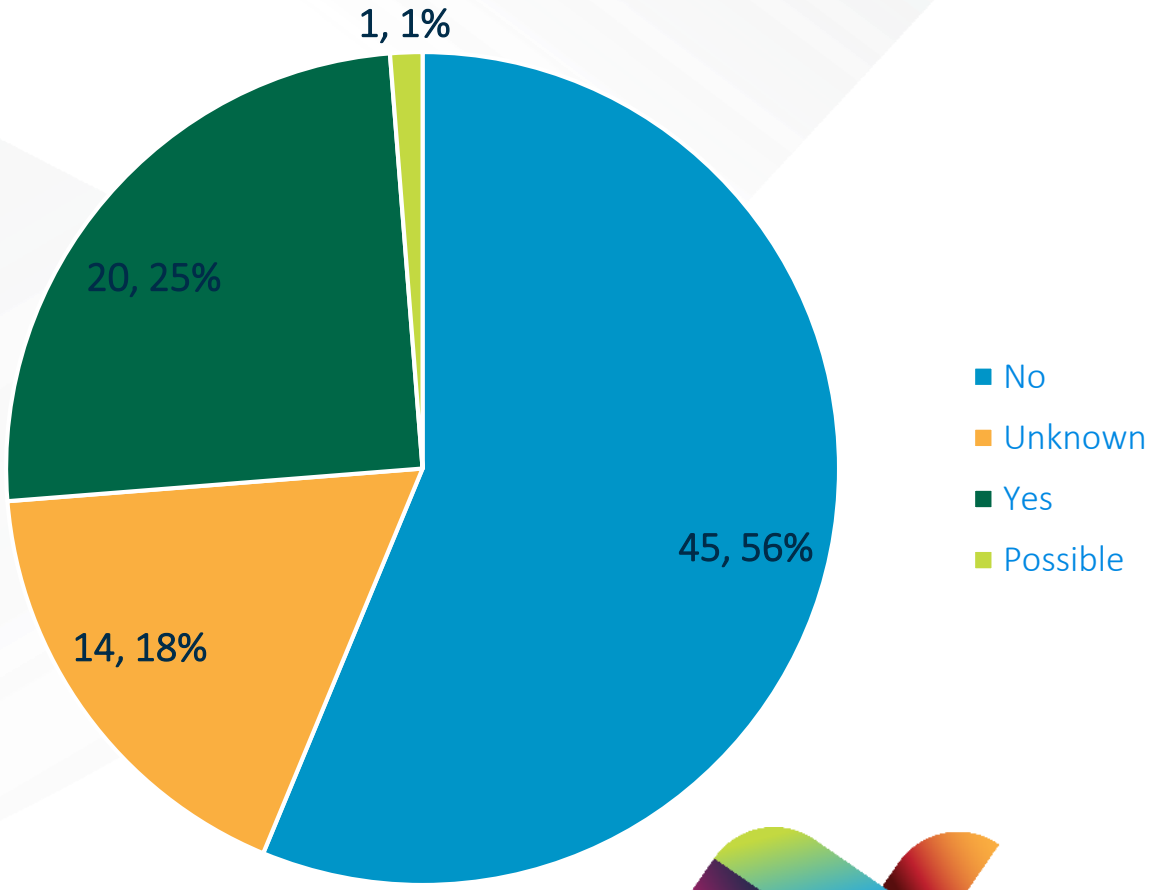
What we're learning: mid-span incidents generally occur at low speed

TMAG analysis - signs of musculoskeletal injury where bird interacted with the distribution network (%)



TMAG analysis - signs of bird feeding prior to network interaction (%)



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What can I do to help?

Threatened Bird Forum - Glossary of common technical terms and acronyms – v0.1

CCT: Covered conductor type

Cross-arm: structural member holding phase conductors on a given over head pole

Collision: a bird strike on a pole top or conductor with no electrocution, resulting in physical injury

Delta: triangular conductor configuration where the centre phase sits above the outer phase

FRP: fibreglass reinforced polymer

Flapper/bird diverter: a device used to make conductors more visible for birds (see bottom right image)

EHV: extra-high voltage (220kV or 110kV) – the level of voltage used on our transmission network– low-risk for large birds

HV: high-voltage (33kV – 11kV) the level of voltage used on our distribution network – high-risk for large birds

LV: low voltage (440v or 220v) voltages at a level suitable for residential consumption - only one recorded incident

OH: over head

Over slung: a conductor which traverses the top of the pole (see top right) rather than the bottom (underslung)

Phase: a single conductor

Phase to phase electrocution: when a bird touches two conductors simultaneously causing electrocution

Phase to earth electrocution: when a bird touches a conductor and a metal cross-arm simultaneously creating an earth potential, usually causing electrocution