Fact sheet

The Arthur Rylah Institute has analysed bird and bat mortality data collected by Victorian wind farms. This fact sheet provides a summary of the analysis and key findings.

Summary

Victorian wind farms are currently required to undertake post-construction monitoring to detect bird and bat mortalities from wind turbine collisions.

DELWP's Arthur Rylah Institute (ARI) has collated and analysed the mortality data from 15 Victorian wind farms, collected between 2003 and 2018.

Mortality monitoring only detects a proportion of deaths that occur. The ARI report found that for many wind farms it was not possible to validly extrapolate from their data to provide estimates of total mortalities, because the data had not been collected rigorously enough to allow confident estimates of total collision mortalities.

DELWP has considered the findings of the report and concluded that further scientific research is required about the impacts of collisions on the populations of species that are at potential risk. This work is underway.

Key findings:

- A total of 1011 dead birds and bats were found at a subsample of turbines at Victorian wind farms, between 2003 and 2018. The report estimates a collision rate of between 0.1 to 6.2 deaths per turbine per year of operation for each species.
- This includes 446 bats from 13 species and 565 birds from 58 species (see Table 1 and Table 2).
- The highest number of recorded mortalities were for White-striped Freetail Bat (296), Australian Magpie (115) and Wedge-tailed Eagle (58).
- The data includes records for threatened species listed under the *Flora and Fauna Guarantee Act 1988* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999,* including*:*
  - Eight Southern Bent-wing Bats (critically endangered under the EPBC Act)
  - One Black Falcon (threatened under the FFG Act)
  - One White-bellied Sea Eagle (threatened under the FFG Act)
  - Five White-throated Needletails (threatened under the FFG Act)
- These figures represent only a subset of the birds and bats that were killed, because many individuals would have been lost or scavenged in between monitoring events. Also, not all individuals would have been detected during monitoring.
- The analysis found that the proportion of bird and bat deaths that are detected is influenced by:
  - the search method
  - frequency of searches
  - number of turbines searched
  - rate at which carcasses persist or are lost to scavengers
  - carcass size, and
  - The searcher's efficiency rates.

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The ARI report has revealed that the above factors, and the efforts made to assess the influence of these factors, varied markedly between wind farms. As a result, data varies, and for most wind farms estimates of total mortalities could not be validly made. DELWP acknowledges that in some cases the methodology for monitoring the impact of turbines and the conditions imposed under the permitting system in the past have not always been consistent. This inconsistency has, in part, made drawing conclusions from the data challenging.

What is being done with this information?

The ARI report provides options to improve the approach to monitoring. DELWP is currently reviewing these and other options to improve the monitoring approach for future wind farm developments.

Further research is also underway to examine the impacts of wind turbine collision mortalities on the populations of key threatened species that are of potential risk to the impacts of collisions.

Table 1. The number of bats found dead at Victorian wind farms during post-construction mortality monitoring programs (2003-2018) at 15 Victorian wind farms.

Common name	Scientific name	# Mortalities
Chocolate Wattled Bat	*Chalinolobus morio*	5
East-coast Free-tailed Bat [1]	*Mormopterus norfolkensis*	1
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*	28
Little Red Flying-fox	*Pteropus scapulatus*	1
Gould's Long-eared Bat	*Nyctophilus gouldi*	1
Gould's Wattled Bat	*Chalinolobus gouldii*	49
Large Forest Bat	*Vespadelus darlingtoni*	16
Lesser Long-eared Bat	*Nyctophilus geoffroyi*	6
Little Forest Bat	*Vespadelus vulturnus*	9
Southern Bent-wing Bat	*Miniopterus orianae bassanii*	8
Southern Forest Bat	*Vespadelus regulus*	2
Southern Free-tail Bat	*Ozimops planiceps* [2]	9
White-striped Freetail Bat	*Austronomus australis* [3]	296
Unidentified		15
Total		**446**

[1] likely to be a mis-identification as this species has not been recorded in Victoria – the animal was probably a Southern Free-tailed Bat, or possibly an Eastern Free-tail Bat *Ozimops ridei*.

Table 2. The number of birds found dead at Victorian wind farms during post-construction mortality monitoring programs (2003-2018) at Victorian wind farms.

Common name	Scientific name	# Mortalities
Australasian Pipit	*Anthus novaeseelandiae*	2
Australian Hobby	*Falco longipennis*	1

Australian Magpie	*Cracticus tibicen*	115
Australian Raven	*Corvus coronoides*	1
Australian White Ibis	*Threskiornis molucca*	1
Barn Owl	*Tyto alba*	1
Black-shouldered Kite	*Elanus axillaris*	3
Black Falcon	*Falco subniger*	1
Black Swan	*Cygnus atratus*	1
Brown Falcon	*Falco berigora*	48
Brown Goshawk	*Accipiter fasciatus*	3
Brown Songlark	*Megalurus cruralis*	1
Buff-banded Rail	*Gallirallus philippensis*	1
Collared Sparrowhawk	*Accipiter cirrhocephalus*	1
Common Bronzewing Pigeon	*Phaps chalcoptera*	1
Common Starling*	*Sturnus vulgaris*	8
Crested Pigeon	*Ocyphaps lophotes*	1
Crimson Rosella	*Platycercus elegans*	1
Dusky Woodswallow	*Artamus cyanopterus*	1
Eurasian Skylark*	*Alauda arvensis*	42
European Goldfinch*	*Carduelis carduelis*	6
Fairy Prion	*Pachyptila turtur*	1
Fluttering Shearwater	*Puffinus gavia*	1
Fork-tailed Swift	*Apus pacificus*	1
Galah	*Eolophus roseicapilla*	3
Grey Teal	*Anas gracilis*	1
Guinea Fowl*	*Numida meleagris*	2
Hoary-headed Grebe	*Poliocephalus poliocephalus*	1
Horsfield's Bronze Cuckoo	*Chrysococcyx basalis*	1
House Sparrow*	*Passer domesticus*	5
Little Button-quail	*Turnix velox*	1
Little Eagle	*Hieraaetus morphnoides*	1
Little Raven	*Corvus mellori*	3
Magpie-lark	*Grallina cyanoleuca*	13
Nankeen Kestrel	*Falco cenchroides*	54
New Holland Honeyeater	*Phylidonyris novaehollandiae*	1
Noisy Miner	*Manorina melanocephala*	1
Pacific Black Duck	*Anas superciliosa*	3
Peregrine Falcon	*Falco peregrinus*	2
Purple Swamp Hen	*Porphyrio melanotus*	1
Red-rumped Parrot	*Psephotus haematonotus*	3
Sacred Kingfisher	*Todiramphus sanctus*	1
Short-tailed Shearwater	*Ardenna tenuirostris*	9
Silver Gull	*Chroicocephalus novaehollandiae*	2

Silvereye	*Zosterops lateralis*	1
Southern Fulmar	*Fulmarus glacialoides*	1
Spotted Harrier	*Circus assimilis*	1
Straw-necked Ibis	*Threskiornis spinicollis*	3
Stubble Quail?	*Coturnix pectoralis*	1
Sulphur-crested Cockatoo	*Cacatua galerita*	2
Swamp Harrier	*Circus approximans*	6
Wedge-tailed Eagle	*Aquila audax*	58
Welcome Swallow	*Hirundo neoxena*	4
Whistling Kite	*Haliastur sphenurus*	5
White-bellied Sea Eagle	*Haliaeetus leucogaster*	1
White-throated Needletail	*Hirundapus caudacutus*	5
Identified to a category of bird		
Bird of prey		2
Corella/cockatoo		7
Duck sp.		2
Finch sp.		1
Green grass parrot?		2
Gull sp.		1
Ibis		1
Raven/crow		41
Unknown bird		69
Total		**565**

* Introduced species