

# Wildlife Health Australia



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Wildlife Health Australia

Wildlife Health Australia (WHA)<sup>1</sup> is the peak body for wildlife health in Australia. WHA was established as the Australian Wildlife Health Network in 2002 as an Australian Government initiative to coordinate wildlife health surveillance information across Australia, to support Australia's animal health industries, human health, biodiversity, trade and tourism. WHA collates information from multiple sources into a national database – the Wildlife Health Information System (eWHIS)<sup>2</sup> – including submissions by WHA subscribers, state and territory WHA coordinators, researchers, and university, zoo and sentinel clinic veterinarians.

During the quarter, 173 wildlife disease investigation events were reported in eWHIS (Table 1 and Figure 4), and samples were collected from 1212 wild birds for avian influenza (AI) surveillance.

This report details some of the disease and mortality events in free-living wildlife recorded in



**Table 1 Number of disease investigations reported into eWHIS, April to June 2019<sup>a</sup>**

Mammals				Birds <sup>d,e</sup>	Reptiles <sup>f</sup>
Bats <sup>b</sup>	Marsupials	Marine mammals	Feral mammals <sup>c</sup>		
106	26	1	4	34	2

a Disease investigations may involve a single animal or multiple animals (e.g. mass mortality event).

b The majority of bat disease investigations are single bats submitted for Australian bat lyssavirus testing.

c European rabbits (*Oryctolagus cuniculus*) and sambar deer (*Cervus unicolor*).

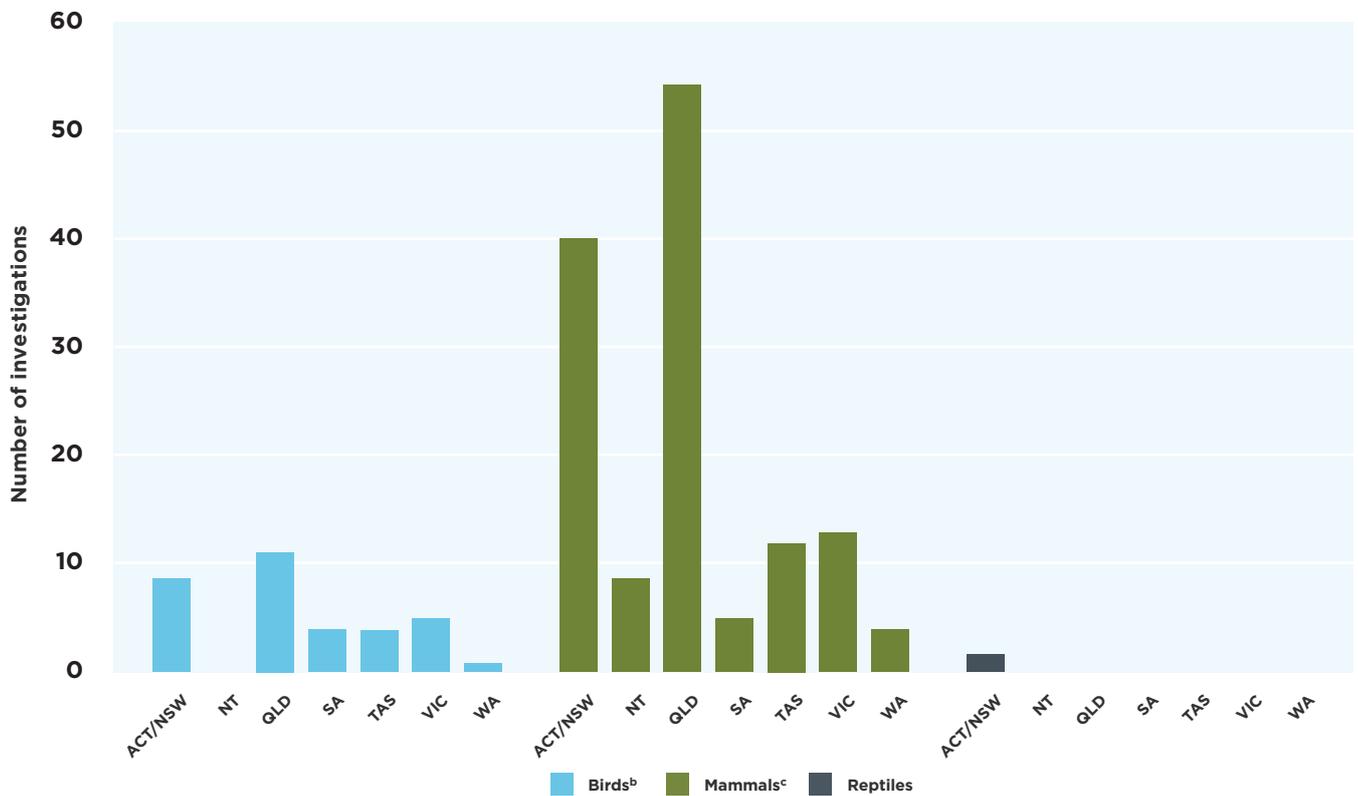
d Additional sampling for targeted AI surveillance is presented elsewhere in this report.

e Includes free-ranging birds (native or feral species) and a small number of events involving birds from zoological collections and captive breeding programs

f One event involved captive snakes and the other a non-native reptile found in the wild.

1 [www.wildlifehealthaustralia.com.au/Home.aspx](http://www.wildlifehealthaustralia.com.au/Home.aspx)

2 [www.wildlifehealthaustralia.com.au/ProgramsProjects/eWHISWildlifeHealthInformationSystem.aspx](http://www.wildlifehealthaustralia.com.au/ProgramsProjects/eWHISWildlifeHealthInformationSystem.aspx)



**Figure 4 Number of disease investigations reported, by jurisdiction, in eWHIS, April to June 2019<sup>a</sup>**

- a The chart shows the number of disease investigation events reported in eWHIS. Each investigation may involve one or multiple animals.
- b 'Birds' includes free-ranging birds (native or feral species) and a small number of events involving birds from zoological collections and captive breeding programs.
- c Investigations involving mammals include individual bats submitted for Australian bat lyssavirus testing.
- d One event involved captive snakes and the other a non-native reptile found in the wild.

eWHIS this quarter. WHA thanks all those who submitted information for this report.

### Wild bird mortality event summary – Newcastle disease and avian influenza exclusion

WHA received 34 reports of wild bird mortality or morbidity investigations from around Australia during the quarter; investigations may involve a single animal or multiple animals (e.g. mass mortality event). A breakdown of wild bird events by taxonomic order is given in Table 2. Reports and samples from sick and dead birds are received from members of the public, private practitioners, universities, zoo wildlife clinics and wildlife sanctuaries. AI was excluded by polymerase chain reaction (PCR) testing for influenza A in 13 events as part of Australia's general (sick and dead bird) AI surveillance program. Disease caused by AI was

excluded in the remaining 21 events, based on clinical signs, history, histopathology, prevailing environmental conditions or other diagnoses. Avian paramyxovirus (APMV) was excluded in 10 events by PCR testing for Newcastle disease (ND) virus or pigeon paramyxovirus type 1 (PPMV-1), or both.

PPMV-1 was diagnosed in free-living rock pigeons (*Columba livia*) that were reported sick and dying in an inner northern suburb of Melbourne in April 2019. Four sick birds with neurological signs, including torticollis, were submitted to AgriBio Veterinary Diagnostic Services, Bundoora, for examination. All four birds had racing bands on a lower leg, indicating they had been domestic pigeons previously. Pooled choanal and cloacal swabs from three birds tested positive for PPMV-1 by real-time PCR assay. Histopathological

findings of mild-to-moderate nephritis in all three pigeons were consistent with PPMV-1 infection.

Findings in wild bird disease investigations this quarter also included aspergillosis, avian pox, botulism, *Escherichia coli* infection, *Macrorhabdus ornithogaster* infection, parasitism, poisoning, protozoal infection, trichomoniasis and trauma.

### Avian influenza surveillance

Australia's National Avian Influenza Wild Bird Surveillance Program<sup>3</sup> comprises two sampling components: pathogen-specific, risk-based surveillance by sampling of apparently healthy, live and hunter-shot wild birds; and general surveillance by investigating significant unexplained morbidity and mortality events in wild birds, including captive and wild birds

<sup>3</sup> [www.wildlifehealthaustralia.com.au/ProgramsProjects/WildBirdSurveillance.aspx](http://www.wildlifehealthaustralia.com.au/ProgramsProjects/WildBirdSurveillance.aspx)

**Table 2 Wild bird disease investigations, by taxonomic order, reported into eWHIS, April to June 2019**

Bird order	Common name for bird order <sup>a</sup>	Events reported <sup>b</sup>
Accipitriiformes	Osprey, hawks and eagles	1
Anseriformes	Magpie geese, ducks, geese and swans	1
Charadriiformes	Shorebirds	2
Columbiformes	Doves and pigeons	1
Coraciiformes	Bee-eaters and kingfishers	1
Falconiformes	Falcons	1
Passeriformes	Passerines or perching birds	9
Pelecaniformes	Ibis, herons and pelicans	1
Phaethontiformes	Tropicbirds	1
Procellariiformes	Fulmars, petrels, prions and shearwaters	3
Psittaciformes	Parrots and cockatoos	10
Sphenisciformes	Penguins	3
Strigiformes	Typical owls and barn owls	1

<sup>a</sup> Common names adapted from: del Hoyo and Collar, 2014, *HBW and BirdLife International Illustrated Checklist of the Birds of the World*. Volume 1 – Non-passerines, Lynx Editions, Barcelona. (Courtesy of the Australian Government Department of the Environment and Energy.)  
<sup>b</sup> Disease investigations may involve a single or multiple bird orders (e.g. mass mortality event). The number of events reported against each bird order does not equal the total number of investigations due to multi-species events. This quarter, one wild bird event involved the orders Coraciiformes and Passeriformes.

within zoo grounds (with a focus on exclusion testing for AI virus subtypes H5 and H7).

Samples from sick or dead birds were discussed earlier. Sources for targeted wild bird surveillance data include state and territory government laboratories, universities and samples collected through the Northern Australia Quarantine Strategy.

During the quarter, pathogen-specific, risk-based surveillance occurred at sites in New South Wales, the Northern Territory, Queensland, Tasmania, Victoria and Western Australia. Of the 1212 cloacal, oropharyngeal and faecal environmental swabs collected from waterbirds, 1213 were tested for AI viruses (AIVs). Based on results to date, no highly pathogenic AIVs were identified. However, targeted surveillance activities this quarter continued to find evidence of low pathogenicity avian influenza (LPAI) viruses, including LPAI H5 and H7.

Molecular analysis of AIVs detected through the targeted

surveillance activities:<sup>4,5</sup>

- contribute to the understanding of AIV dynamics in Australia
- help maintain the currency of diagnostic tests
- serve as a point of comparison when novel AIV strains of importance emerge overseas.

The findings reiterate the need for poultry producers to remain alert and ensure that appropriate biosecurity arrangements and effective risk reduction measures for AI are in place at their premises.

### Australian bat lyssavirus

Reports to WHA for the 6 months from January to June 2019 included 340 bats tested for Australian bat lyssavirus (ABLV) from all states and territories.

<sup>4</sup> Haynes et al. 2009, Australian surveillance for avian influenza viruses in wild birds (July 2005 to June 2007). *Australian Veterinary Journal* 87(7): 266-272.  
<sup>5</sup> Grillo et al. 2015, Avian influenza in Australia: a summary of 5 years of wild bird surveillance. *Australian Veterinary Journal* 93(11): 387-393.

Bat submissions were made for a variety of reasons:

- 83 cases involved contact with the potential for ABLV transmission to humans; of these
  - 39 were also associated with trauma (e.g. barbed wire fence and fruit tree netting entanglement, bone fractures, wing tears)
  - 10 also involved contact with a pet dog or cat
  - 7 displayed neurological signs (e.g. hindlimb paralysis, head tremors, unusual vocalisations, seizures)
  - 8 displayed other (non-neurological) signs
  - the remainder had no further history reported
- 137 cases involved contact with a pet dog (115) or cat (18), or both (4)
- 47 cases were associated with trauma (e.g. injuries due to entanglement in barbed wire fence or fruit tree netting, electrocution on power lines, fractures)

- 14 bats displayed neurological signs (e.g. aggression, disorientation, self-mutilation, unusual vocalisation, inability to swallow, head tremors, head tilt, nystagmus, twitching, seizures, paralysis)
- 28 bats displayed other (non-neurological) signs
- 5 bats were found dead
- 26 bats had no history reported, including 22 from a Queensland surveillance project.

Bat carers submitted 76 insectivorous bats as part of an ongoing surveillance project conducted by the Queensland Department of Agriculture and Fisheries, and all tested negative for ABLV.

In the first half of the year, six flying-foxes were confirmed positive for ABLV by fluorescent antibody test, PCR testing for pteropid ABLV ribonucleic acid (RNA) and/or

immunohistochemistry. These were two grey-headed flying-foxes (*Pteropus poliocephalus*), two little red flying-foxes (*P. scapulatus*) and two unidentified flying-foxes (*Pteropus* sp.), all from New South Wales. Details of the cases are as follows:

- In two cases, the flying-foxes presented with neurological signs. One was rescued after falling from a tree; it displayed lethargy, head tremor, salivation, inappetence and respiratory distress. The other was found in a backyard; it was depressed and showed unilateral hindlimb paralysis and involuntary movements.
- Two flying-foxes were submitted for testing due to potentially infectious contact with a human. One had unusual vocalisation but no other overt neurological signs.

- A grey-headed flying-fox was euthanased after being injured by a dog and subsequently developing an ascending paralysis.
- A little red flying-fox was part of a colony affected by a heatwave and was found hanging in a tree close to the ground, distressed and unable to fly.

Potentially infectious human contact was reported for four of the six cases. In each event, clinical advice was provided by an experienced public health official.

More information on ABLV testing of bats in Australia is available in ABLV Bat Stats.<sup>6</sup> ABLV is a nationally notifiable disease in Australia. Cases of suspect ABLV infection or exposure should be reported to the Emergency Animal Disease Watch Hotline on 1800 675 888.

<sup>6</sup> [www.wildlifehealthaustralia.com.au/ProgramsProjects/BatHealthFocusGroup.aspx](http://www.wildlifehealthaustralia.com.au/ProgramsProjects/BatHealthFocusGroup.aspx)

