

# Wildlife Health Australia



**Keren Cox-Witton, Silvia Ban and Tiggy Grillo**  
Wildlife Health Australia

Wildlife Health Australia (WHA)<sup>9</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>10</sup> – including submissions by WHA subscribers, state and territory WHA coordinators, researchers, and university, zoo and sentinel clinic veterinarians.

During the quarter, 263 wildlife disease investigation events were reported in eWHIS (Table 1 and Figure 3), and samples were collected from 1161 wild birds for avian influenza (AI) surveillance. The high number of bat events this quarter is due to a starvation event in flying-foxes



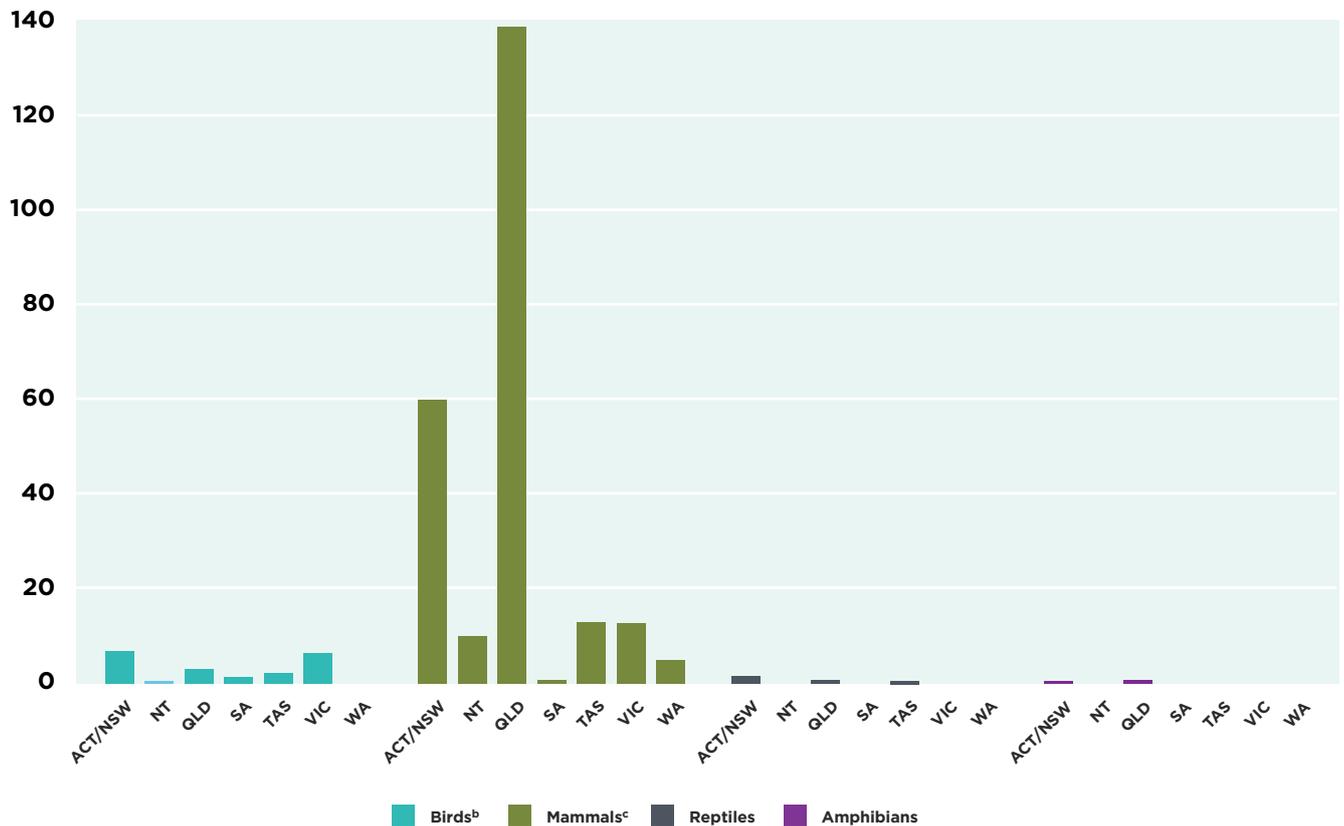
Photo credit: David Clode

**Table 1 Number of disease investigations reported in eWHIS, July to September 2019<sup>a</sup>**

Mammals					Birds <sup>d,e,f</sup>	Reptiles <sup>f</sup>	Amphibians
Bats <sup>b</sup>	Marsupials	Monotremes	Marine mammals	Feral mammals <sup>c</sup>			
201	25	2	7	3	20	4	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*).
- d Additional sampling for targeted avian influenza 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 disease investigation involved reptiles and one bird, so the total number of events reported is not equal to the sum of events under each taxonomic group.

<sup>9</sup> [www.wildlifehealthaustralia.com.au/Home.aspx](http://www.wildlifehealthaustralia.com.au/Home.aspx)  
<sup>10</sup> [www.wildlifehealthaustralia.com.au/ProgramsProjects/eWHISWildlifeHealthInformationSystem.aspx](http://www.wildlifehealthaustralia.com.au/ProgramsProjects/eWHISWildlifeHealthInformationSystem.aspx)



**Figure 3 Number of disease investigations reported, by jurisdiction, in eWHIS, July to September 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.

in New South Wales and Queensland.

This report details some of the disease and mortality events in free-living wildlife recorded in 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 20 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 PCR testing for influenza A in 10 events as part of Australia's general (sick and dead bird) AI surveillance program. Disease caused by AI was excluded in the remaining 11 events, based on clinical signs, history, histopathology, prevailing environmental conditions or other diagnoses. Avian paramyxovirus (APMV) was excluded in eight events by PCR testing for Newcastle disease (ND) virus or pigeon paramyxovirus type 1 (PPMV-1), or both.

Findings in wild bird disease investigations this quarter also included botulism, dermatomycosis, *Macrorhabdus ornithogaster* infection, parasitism, poisoning, protozoal infection, rhabdomyosarcoma, salmonellosis, trichomoniasis and trauma.

### Avian influenza surveillance

Australia's National Avian Influenza Wild Bird Surveillance Program<sup>11</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 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.

<sup>11</sup> [www.wildlifehealthaustralia.com.au/ProgramsProjects/WildBirdSurveillance.aspx](http://www.wildlifehealthaustralia.com.au/ProgramsProjects/WildBirdSurveillance.aspx)

During the quarter, pathogen-specific, risk-based surveillance occurred at sites in New South Wales, Queensland, South Australia and Tasmania. Of the 1161 cloacal, oropharyngeal and faecal environmental swabs collected from waterbirds, 1161 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 H7.

Molecular analysis of AIVs detected through the targeted surveillance activities:<sup>12,13</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.

### Nidovirus identified in neurological syndrome in Tasmanian brushtail possums

A cluster of brushtail possums (*Trichosurus vulpecula*) with neurological signs in the greater Hobart area was investigated in April-May 2019. Signs included docility, out during daylight, difficulty climbing, gait abnormalities, tremors, head tilt, circling, uncoordinated movement and signs of visual impairment or blindness. These signs are consistent with 'wobbly possum disease', which was first discovered in brushtail possums in New Zealand in 1995. Over 25 affected possums have been reported in Tasmania since 2015, the majority in this year's cluster (Figure 4).

The possums were seronegative for toxoplasmosis. Histopathological changes were consistent with a viral cause. A nidovirus was identified as the likely causative agent through

immunohistochemistry in New Zealand and PCR assay and next-generation sequencing at CSIRO Australian Animal Health Laboratory, Geelong.

The viral sequence is very similar to wobbly possum disease virus, which was previously identified as the causative agent in New Zealand cases. The epidemiological relationship between the New Zealand and Tasmanian nidoviruses is unclear. Brushtail possums were originally translocated from Australia (including Tasmania) to New Zealand.

This disease appears to be affecting individual animals only, with no observable effect on the population. DPIPWE has provided advice to wildlife carers on biosecurity and reporting.

There is an ongoing multi-agency investigation into this event, and funding was provided from the National Significant Disease Investigation Program.

For more information, see the [DPIPWE website](#) and the [WHA Fact Sheet \(PDF\)](#).

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

Bird order	Common name for bird order <sup>a</sup>	Events reported <sup>b</sup>
Accipitriiformes	Osprey, hawks and eagles	2
Anseriformes	Magpie geese, ducks, geese and swans	2
Caprimulgiformes	Frogmouths, nightjars, owlet-nightjars, swifts	1
Charadriiformes	Shorebirds	1
Columbiformes	Doves and pigeons	2
Passeriformes	Passerines or perching birds	4
Pelecaniformes	Ibis, herons and pelicans	2
Psittaciformes	Parrots and cockatoos	4
Strigiformes	Typical owls and barn owls	3

a 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.)

b 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 Columbiformes and Passeriformes.

12 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.

13 Grillo et al. 2015, Avian influenza in Australia: a summary of 5 years of wild bird surveillance. *Australian Veterinary Journal* 93(11): 387-393.

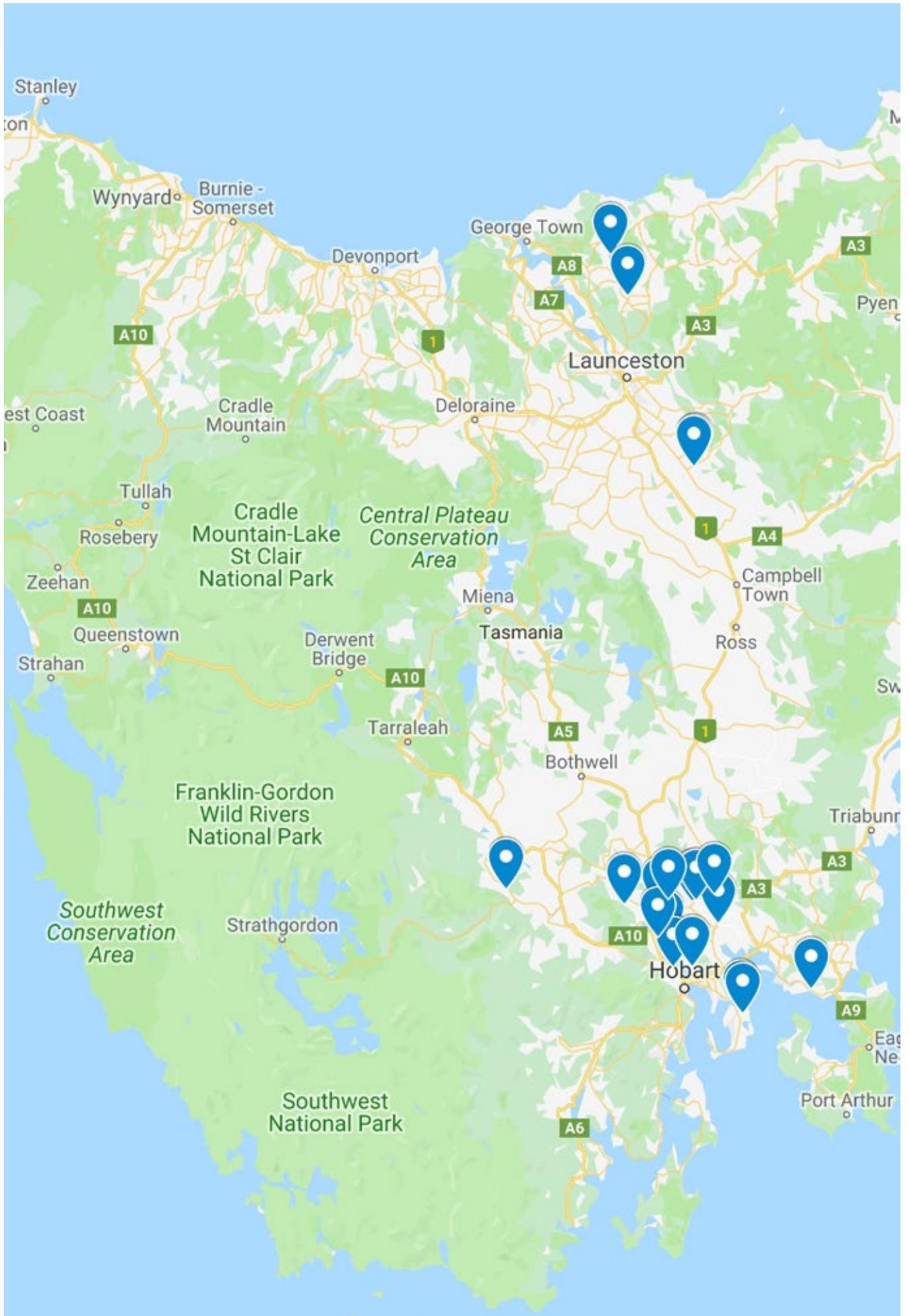


Figure 4 Location of confirmed wobbly possum disease in Tasmania. Map: DPIWPE