The Australian Wildlife Health Network (AWHN)\textsuperscript{9} is an Australian Government initiative that coordinates wildlife health surveillance information across Australia, with emphasis on supporting Australia's livestock health, trade, human health and biodiversity. The AWHN collates information from a number of sources into a national database — the wildlife health information system (eWHIS)\textsuperscript{10} — including submissions by AWHN subscribers, state and territory wildlife coordinators, researchers and zoo veterinarians. This report details some of the wildlife disease and mortality events recorded in eWHIS for the July–September quarter. The AWHN would like to thank all those who submitted information for this report.

**Wild bird mortality events — Newcastle disease and avian influenza exclusions**

The AWHN received 37 reports of wild bird mortality or morbidity events from across Australia during July, August and September 2012. Reports and samples from sick and dead birds include submissions from members of the public, private practitioners, universities, zoo wildlife clinics and wildlife sanctuaries. Avian influenza (AI) was excluded by PCR for influenza A in 16 of the events as part of Australia's passive (sick and dead bird) AI surveillance program. AI exclusion testing was not warranted in the remaining 21 events based on clinical signs, history, prevailing environmental conditions or other diagnoses. In addition, avian paramyxovirus was excluded by PCR specific for Newcastle disease virus and/or pigeon paramyxovirus 1 in nine events.

In August, there were four mortality reports involving Australian pelicans (Pelecanus conspicillatus) in widely separated locations in Darwin and the surrounding area. In two cases, single birds were submitted to the Berrimah Veterinary Laboratories. In both cases, septicaemia was diagnosed, based on typical histological lesions and bacterial culture of filtering organs, which yielded different subspecies of Salmonella in each bird. A heavy parasite burden was also noted on necropsy of one of these two birds, which may have contributed to its death. In the third case, four birds were found dead. On necropsy of one bird submitted for diagnostics, parasites and blood were noted in the proventriculus, but the cause of death could not be definitively identified. In all cases, AI was excluded by PCR. In the fourth case, only decayed remains of multiple carcasses were found in a remote wetland. There were also anecdotal reports to the Northern Australian Quarantine Strategy (NAQS) program of pelican mortalities near Broome, Western Australia; however, no samples were taken due to the time delay between the deaths and reporting to NAQS.

**Avian influenza surveillance**

As part of Australia's AI surveillance program, two sampling components are undertaken: targeted surveillance via sampling of apparently healthy, live and hunter-killed wild birds, and general surveillance via investigation of significant, unexplained morbidity and mortality events in wild birds, including captive and wild birds within zoo grounds (with a focus on H5 and H7 exclusion testing). Samples from sick or dead birds are discussed in the previous section. Sources for targeted wild bird surveillance data include state and territory government laboratories, universities, and samples collected through the NAQS program.

Between July 2011 and June 2012, active wild bird surveillance occurred at sites in New South Wales, Queensland, Victoria, Tasmania, South Australia, the Northern Territory and Western Australia. Samples were taken from 8244 birds, with the majority collected from waterbirds (ducks and waders). No highly pathogenic AI viruses were identified. However, surveillance activities continue to find evidence of a wide range of subtypes of low-pathogenic AI viruses, including low-pathogenic H5 and H7, as well as H1, H3, H4, H6 and H8–H12. The findings support the need for continuing surveillance activities in wild birds, and 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.

In September 2012, the National Avian Influenza Wild Bird Steering Group held its annual face-to-face meeting. The direction of the the National Avian Influenza Wild Bird Surveillance Program 2012–13 was discussed.

During the quarter, targeted healthy, live wild bird surveillance occurred at sites in Queensland, New South Wales and the Northern Territory, with faecal environmental swabs collected from 1298 waterbirds. No highly pathogenic AI viruses have been identified. A number of positive swabs to low-pathogenic AI are undergoing further testing.

**Australian bat lyssavirus**

Reports to the AWHN for the July–September quarter included 48 bats tested for Australian bat lyssavirus (ABLV) from New South Wales, Queensland, Victoria, Tasmania, the Australian Capital Territory and South Australia. Bat submissions were made for a variety of reasons: 15 cases
involved contact with the potential for ABLV transmission to humans; 4 bats were reported to display unusual, aggressive or agitated behaviour, or other neurological signs; 20 bats were presented based on contact with a pet dog or cat, and 1 for contact with a nondomestic species; 1 bat presented with non-neurological clinical signs (skin lesions); 2 bats were submitted following trauma; 3 bats were found dead; and 2 bats had no history.

One bat submitted this quarter, a grey-headed flying fox (*Pteropus poliocephalus*) found dead in Adelaide, South Australia, was confirmed positive for ABLV by fluorescent antibody test for lyssaviral antigen, immunohistochemistry, PCR for pteropid ABLV RNA and virus isolation. There was no potentially dangerous human or animal contact in this case. SA Health was notified and issued a public health message that was reiterated by the Department of Primary Industries and Regions South Australia. This is the first time that ABLV has been identified in South Australia. Grey-headed flying foxes have only recently become established in Adelaide; previously, there were only occasional visits by flying foxes to South Australia. According to the South Australian Department of Environment, Water and Natural Resources, this movement could be due to a combination of factors, including habitat loss, competition for food resources, and the effects of climate change across their natural range in the eastern states.\(^\text{11}\)

**White-nose syndrome excluded in three microbats**

White-nose syndrome, which is caused by the fungus *Geomyces destructans*, was excluded in two microbats in Victoria in August, and one microbat in Queensland in April. White-nose syndrome\(^\text{12-15}\) has caused the deaths of very large numbers of bats in North America, with mortality estimates of more than 5.5 million bats.\(^\text{16}\) The syndrome has not been identified in Australia.

In Victoria, three eastern broad-nosed bats (*Scotorepens orion*) were presented to the Australian Wildlife Health Centre at Healesville Sanctuary with crusty white skin lesions on the wing, neck, nose and lip. The bats were from a reserve in Ivanhoe in Victoria. Eleven Gould’s wattled bats (*Chalinolobus gouldii*) seen at the same site were reported to be without clinical signs.

The most severely affected bat was euthanased and sent to the Victorian Department of Primary Industries Diagnostic Laboratory for testing. A biopsy was taken from a second bat. Histopathology on these samples showed ulcerative, necrotising dermatitis with large numbers of gram-positive cocci, and smaller numbers of superficial yeasts. Fungal culture revealed yeast consistent with *Malassezia* sp. ABLV was excluded by immunohistochemistry; a diagnosis of bacterial dermatitis was made. White-nose syndrome was excluded from these cases because the histopathology was not characteristic of the disease and the causative organism, *G. destructans*, was not grown in fungal culture at a range of temperatures. The two remaining bats recovered with antibiotic treatment and were released. The National Significant Disease Investigation Program funded this investigation.\(^\text{15}\)

The microbat in Queensland was found dead in a backyard shed by a member of the public; it had a white powdery substance on its face. At necropsy, it was identified to be a vespertilionid bat, and the body was noted as being mummified. There were numerous septate, branching fungal hyphae on the skin surface and within the dermal connective tissue, but no inflammatory response was evident. Fungi cultured at the Tropical and Aquatic Animal Health Laboratory in Townsville were consistent with postmortem overgrowth of environmental organisms. White-nose syndrome was excluded based on negative culture results and lack of the distinctive bean-shaped conidia of *Geomyces* spp.

**Mycobacterium pinnipedii confirmed in a wild, free-living Australian fur seal in South Australia**

A wild, free-living Australian fur seal (*Arctocephalus pusillus doriferus*) was found stranded and collapsed on a beach at Beachport, South Australia, on 9 August 2012. The seal was kept at a rescue centre for 10 days before it died of respiratory failure. A full necropsy at the University of Adelaide revealed gross lesions of pyogranulomatous pneumonia and lymphadenitis, and pericarditis. Impression smears of pulmonary granulomas stained with Ziehl–Neelsen stain revealed intrahistiocytic acid-fast beaded rods. Lung tissue cultured by the Institute of Medical and Veterinary Science (IMVS) was positive for *Mycobacterium tuberculosis* complex. A full 24-loci mycobacterial interspersed repetitive-unit variable-number tandem-repeat (MIRU-VNTR) typing by the IMVS subsequently confirmed the sample to be *M. pinnipedii*. This is the first reported case of *M. pinnipedii*–associated disease in a pinniped in South Australia. Further information is available in the AWHN fact sheet.\(^\text{16}\)

\(^\text{13}\) www.whitenosesyndrome.org  
\(^\text{14}\) http://whitenosesyndrome.org/sites/default/files/files/nr_wnclosureorder_final_7-31-12.pdf  