Wild bird mortality events — Newcastle disease and avian influenza exclusions

The AWHN received 105 wild bird mortality or morbidity event reports from across Australia during April, May and June 2012. Reports and samples from sick and dead birds included 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 30 of the events as part of Australia’s passive (sick or dead bird) AI surveillance program. AI exclusion testing was not warranted in the remaining 75 events based on clinical signs, history, prevailing environmental conditions or other diagnoses. In addition, avian paramyxovirus was excluded in 22 events by PCR specific for Newcastle disease virus and/or pigeon paramyxovirus 1.

Over a two-week period from late March to early April, a resident in Robertson, New South Wales, found two satiny bowerbirds (Platycercus elegans) and three crimson rosellas (Platycercus elegans) dead in the backyard, where a small flock of hens was kept in a A-frame coop that was moved daily. The last dead crimson rosella was submitted for necropsy to the Department of Health Surveillance Victoria submitted three dead lorikeets for necropsy and bacterial culture to the Department of Primary Industries Attwood Veterinary Laboratory, which confirmed enteritis caused by Clostridium perfringens. The tissue of the lower small intestine was distorted — the mucosa had been replaced by a thick layer composed mainly of mononuclear inflammatory cells, cellular debris and erythrocytes that were admixed with numerous gram-positive, rod-shaped, sporulating bacteria and bacterial spores. Higher numbers of haemolytic colonies of C. perfringens were cultured from the lower small intestine than from the duodenum. Advice was provided to the public about the risks of hand feeding and supplementary feeding birds, and precautions to be taken when disposing of dead birds.

Laboratory investigations were partly funded through the National Significant Disease Investigation Program.

In the Northern Territory, there were two separate reports of sick and dying wild little corellas (Cacatua sanguinea) submitted for necropsy. Both birds were in very poor body condition with severe haemoparasitism, likely due to Plasmodium sp. based on typical life cycle forms in red blood cells and a regenerative red cell response. One little corella also had Spironucleus-like protozoa in the small intestine, with gross and microscopic evidence of enteritis. One bird had classic histological lesions of circovirus and the other bird had suggestive lesions. The protozoan infections may be secondary to immunosuppression due to circovirus infection.

Reports and investigation into necrotic enteritis in free-living rainbow lorikeets (Trichoglossus haematodus), as reported in AHSG Vol. 17 Issue 1, continued into this quarter, with reports of dead and sick lorikeets at more than 25 sites in the eastern and north-eastern suburbs of Melbourne, Victoria. Between December 2011 and June 2012, approximately 300 lorikeets died, with almost 80 of these deaths recorded in the Blackburn area. Wildlife Health Surveillance Victoria submitted three dead lorikeets for necropsy and bacterial culture to the Department of Primary Industries Attwood Veterinary Laboratory, which confirmed enteritis caused by Clostridium perfringens. The tissue of the lower small intestine was distorted — the mucosa had been replaced by a thick layer composed mainly of mononuclear inflammatory cells, cellular debris and erythrocytes that were admixed with numerous gram-positive, rod-shaped, sporulating bacteria and bacterial spores. Higher numbers of haemolytic colonies of C. perfringens were cultured from the lower small intestine than from the duodenum. Advice was provided to the public about the risks of hand feeding and supplementary feeding birds, and precautions to be taken when disposing of dead birds.

Avian influenza surveillance in wild birds

As part of Australia’s AI surveillance program, live (healthy and sick) and dead (including hunter-killed) wild birds are targeted. Samples from sick or dead birds are discussed above. Sources for active wild bird surveillance data include state and territory government laboratories, universities, and samples collected through the Northern Australia Quarantine Strategy program.

During the quarter, targeted healthy, live wild bird surveillance occurred at sites in New South Wales, the Northern Territory, South Australia, Victoria, Queensland, Tasmania and Western Australia, with 3085 swabs (fresh faecal environmental or cloacal swabs) collected from...
Macrorhabdus ornithogaster in wild birds

Macrorhabdus ornithogaster (previously known as megabacteria) causes a fungal infection commonly diagnosed in a variety of pet and aviary birds. It is occasionally identified in wild birds in Australia and has been implicated as a possible contributor (along with *Spironucleus* spp.) to a syndrome of weight loss in juvenile galahs (*Eolophus roseicapillus*) in southeast Queensland. *M. ornithogaster* is usually identified by microscopic examination of a wet-mount faecal preparation.

*M. ornithogaster* infection was diagnosed in 11 wild birds reported to the AWHN between April and June 2012. There were four affected galahs and one little corella from southeast Queensland, five galahs from northern New South Wales and a little corella from a Perth suburb. All cases were reported into the National Wildlife Health Information System through the Zoo Based Wildlife Disease Surveillance Program.

The galahs from Queensland and New South Wales presented to Currumbin Wildlife Sanctuary were emaciated and were all diagnosed with *M. ornithogaster* based on a wet-mount faecal smear. Four were from a single flock that, along with an Indian ringneck (*Psittacula krameri*) believed to be an escaped aviary bird, were known to be fed by a member of the public. One of the galahs, which presented with dyspnoea, had a heavy burden of *M. ornithogaster* in the proventriculus and a heavy infection of *Trichomonas* associated with caseous pharyngeal lesions (based on cytology).

The little corella was presented to Perth Zoo in June due to ill-thrift and was euthanased after radiographs indicated a femoral fracture associated with a pellet. This bird had intracytoplasmic inclusions in the crop resembling those found in psittacine circoviral infections, a fungal infection of the lung and air sac with hyphae and conidiophores indicative of *Aspergillus* spp., and hyphal structures in the koilin layer of the ventriculus resembling *M. ornithogaster*. There was no significant inflammatory response associated with either of the fungal organisms, indicating an acute overwhelming infection or severe immunosuppression, possibly due to circoviral infection. *Chlamydophila* infection was excluded in this bird by immunofluorescence testing.

There are only a few previous cases of *M. ornithogaster* infection recorded in eWHIS, but there have been further anecdotal reports in wild birds. In 2009, a wild rainbow lorikeet was one of a group of birds being investigated for neurological disease on the Gold Coast in Queensland. *Macrorhabdus*-like organisms were seen in the proventriculus and large intestine, with gross evidence of abnormal watery diarrhoea. This bird also had circoviral inclusions in the bursa.

It is not known whether infection with *M. ornithogaster* alone causes clinical disease in wild birds, whether it is an opportunistic pathogen, or whether it contributes with other infectious organisms to a syndrome of weight loss and ill-thrift. Further investigation is needed to assess its impact on the health of wild birds, particularly when occurring concurrently with other infections such as spironucleosis, circovirus and aspergillosis.

Australian bat lyssavirus

Reports to the AWHN for the April–June quarter included 17 bats tested for Australian bat lyssavirus (ABLV) from New South Wales, Queensland, Victoria, Tasmania and Western Australia. Bat submissions were made for a variety of reasons: six cases involved contact with the potential for ABLV transmission to humans, one of which also involved trauma and aggressive behaviour; two bats were reported to display unusual, aggressive or agitated behaviour or other neurological signs — one also had suspected contact with a pet dog; four bats presented based on contact with a pet dog only; one bat presented with non-neurological clinical signs; two bats were submitted following trauma only; one bat was found dead; and for one bat no history was reported.

One bat submitted this quarter was confirmed positive for ABLV by a fluorescent antibody test for lyssaviral antigen and PCR for pteropid ABLV RNA. This was a juvenile black flying fox (*Pteropus alecto*) from the Logan district in southeast Queensland that presented recumbent and aggressive. The bat was suspected to have had contact with a pet dog; however, the risk of exposure to the dog was deemed to be minimal. There was no potentially dangerous human contact in this case.