

Wildlife Health in Australia



Newsletter of the Australian Wildlife Health Network

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Message from the Chair

DR. LYNDEL POST,
Office of the Chief Veterinary Officer

Wildlife diseases are emerging as a priority for the World Organisation for Animal Health (the OIE, based in Paris). The OIE has been moving recently to improve surveillance and diagnostic tools for wildlife and to include wildlife diseases in chapters of the *Terrestrial Code* and is developing a global network of Wildlife Focal Points, to act as a key group to progress this work.

Australia's OIE Delegate, (Dr Andy Carroll, Australia's Chief Veterinary Officer) nominated me, as Chair of the AWHN, to be Australia's Wildlife Focal Point. He asked me to work closely with the AWHN to develop ways for Australia to meet our wildlife obligations. Rupert Woods and I recently attended the regional workshop in Bangkok, held to discuss the tasks and obligations of Focal Points. It was an excellent opportunity for us to meet our counterparts from nearly 35 of our neighbouring countries.

This development has recognised the value of the AWHN and its members to Australia and our neighbouring region. Rupe and I will be working in the coming months to build on linkages established at the workshop.

NEWS

Lyme Disease Mystery

The controversy surrounding claims that Lyme Disease exists in Australia have been reignited following the death of Karl McManus in July.

Mr McManus, 44, was bitten by a tick while working in Waratah Park, Northern Sydney, and over the months before his death showed neurological and paralysis symptoms. Original testing in Australia returned negative results, however following re-testing at clinics in the US and Germany, both tests returned positive for Lyme Disease. The supreme court granted Mr McManus's widow permission to exhume the body for autopsy.

Lyme disease is caused by the bacterium *Borrelia burgdorferi*. Typical symptoms include fever, headache, fatigue, sore muscles and joints, and a characteristic skin rash called erythema migrans.

The legitimacy of claims that Lyme Disease is in Australia

are still questioned, as there is yet to be a proven case in Australia. NSW Health concedes the tests to diagnose Lyme disease are "technically complex" and rarely definitive.

The NSW Health Fact Sheet states that "While there is little evidence that Lyme disease is caused by Australian ticks, there may be other infections carried by Australian ticks which may cause an infection which is similar to Lyme disease. These infections remain poorly characterised."



Two ticks of the species *ixodes holocyclus*, picked off koalas in the Koala Hospital in Port Macquarie, New South Wales, Australia. The small tick had not yet started feeding, while the other had probably been at work for a couple of days. The amount of blood inside the larger tick is probably around 5 milli-litres.

Photo Courtesy of : Share Alike 3.0 Unported

A study by Sydney researchers (Russell et al. 1994; Russell 1995), found no evidence of *Borrelia burgdorferi* in more than 12,000 ticks collected from the NSW coast. Ladds (2009) recently reviewed the literature on *Borrelia* in Australian native wildlife and concluded that:

- 1) there is no definitive evidence for the existence in Australia of *Borrelia burgdorferi*, the causative agent of Lyme disease, and;
- 2) limited testing of Australian native rats, bandicoots and an agile (brown) antechinus provided no evidence of infection with borreliae in Australia (Russell et al. 1994);

The Wildlife Health Network has been collecting information on wildlife health in Australia through its system of state and territory coordinators since 2002.

As part of reporting arrangements, wildlife coordinators are asked to report monthly on any interesting or unusual cases in their jurisdictions. Lyme disease and infection with *Borrelia* spp. is included in this category. This data is collated and stored in the National Wildlife Health Information System (NeWHIS). NeWHIS contains no reports of Lyme disease or *Borrelia* spp. infection in any native or introduced species over this time period.

The Australian Registry of Wildlife Health contains detailed pathology records on diseases with wildlife as part of their ecology for Australia: there are also no records of Lyme disease or *Borrelia* spp. infections in this dataset.

We would be very interested in any information from Network subscribers on current or past activities or surveys for evidence of Lyme disease or *Borrelia* spp. in Australian native animals.

NSW Health Fact Sheet:

http://www.health.nsw.gov.au/factsheets/infectious/lyme_disease.html

National Significant Diseases Investigation (NSDI) Program—wildlife disease event funding

The National SDI Program subsidises livestock and wildlife disease investigations by veterinary practitioners where financial limitations to their investigation exist (e.g. low economic value of individual animals relative to the cost of veterinary services). Subsidies of \$220 (or \$320 for investigations at remote locations) are available for both the initial field and clinical evaluation, and for a follow-up investigation. In return, the practitioner must provide a case report of the investigation.

If you are interested in applying for funding, or would like more information on the NSDI please go to <http://www.animalhealthaustralia.com.au/programs/adsp/sdi.cfm>. A list of NSDI contacts is available at this site. Incorporation of wildlife into the program is available in Victoria, Tasmania, Queensland, Northern Territory, NSW and SA.

This program is funded by Animal Health Australia from livestock industry and government subscriptions. They aim to boost Australia's capacity for the early detection of emerging and emergency animal diseases by recruiting greater participation of veterinary practitioners and subsidising the cost of their disease investigations.

We would be very grateful if you could advise us when you apply for funding via either of these programs, and if you are successful, so that we can maintain a log of requests and which were successful and which that were not. This will help us work to ensure the program is effective into the future. We are also happy to discuss your application prior to submission if you consider that would be helpful.

Disease Events

Victoria

Four Grey-headed flying foxes were submitted for lyssavirus exclusion, with no positive results. One flying fox had suppurative meningoencephalitis. The other three tested were submitted as a result of human exposure.



Late April, there were over 10 pelicans and a number of seagulls found dead at the Gippsland Lakes. This event received media attention on ABC (<http://www.abc.net.au/news/stories/2010/04/08/2867359.htm?section=justin>). One of the pelicans was autopsied by the private veterinarian and samples were submitted to a private veterinary laboratory in Melbourne. Botulism was suspected as the cause of death based on the clinical signs and lack of any other pathology. Serum and intestinal contents were negative for Botulinum toxins C & D by ELISA. Avian Influenza (AI) testing was not performed in this case.

In late April there was an incident of over 30 Wood Ducks which died at a property in Lorne. Accidental diazinon toxicity was suspected as the cause of death based on the history. A chemical used for control of lawn grubs had been applied in the days just prior to the ducks arrival at the property. Avian Influenza (AI) and Newcastle Disease (ND) were ruled out.

In the last 3-4 months, there have been quite a few submissions of wild birds, (mainly long billed corellas and galahs) from the Horsham area in Western Victoria. AI has been ruled out, and the main diagnosis has been toxicity with Fenitrothion. It is unclear whether these are accidental or deliberate poisonings.

Salmonellosis was diagnosed as the cause of gastroenteritis in a common wombat at Healesville Sanctuary in May. Serotyping is pending.

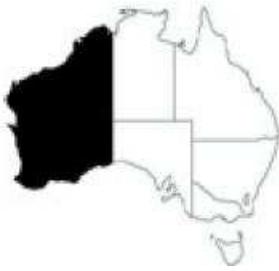
There was an Eastern Grey Kangaroo mass mortality event in late June at Bundoora, where 20 sick or dead kangaroos were found. One kangaroo was submitted for autopsy and had severe ulcerative parasitic gastritis. The worms were identified as immature *Pharyngostromylus cappa*.

AAD

Nothing to Report

Western Australia

There has been a number of events of bird mortalities in remote areas, but by the time they are found are not diagnostically useful. WA is currently working to get a basic kit to wildlife officers to improve the chances of obtaining diagnostic samples.



One important issue that's being discussed between the Department of Environment, Perth Zoo, and DAFWA's Animal Health Laboratory is with animals that move backwards and forwards between captivity and the wild. They are currently looking at preparing some procedures how they manage the introductions in collaboration with ARWH.

Chlamydomphila is being reported in Carnaby's Black Cockatoo which have been in care. Pathogen is potentially flowing between birds in captivity and the wild. This is being closely watched and management factors considered.

A Little Red Flying fox from Broome confirmed as ABLV positive by both positive indirect fluorescent antibody test for lyssaviral antigen and PCR for viral RNA.

Squamous Cell Carcinoma has been diagnosed based on histology in a captive mulgara (a little dasyurid) which presented with a mass on it's mandible.

Queensland

Over a two month period between April and June we had approximately 20 submissions of bats due to dog-bat contact. No ABLV positives were identified. There was also a cat attack on a microbat, and a tiger attack on a flying fox reported from a zoo, both of which were also ABLV negative.



A number of mass mortality events in little red flying foxes were reported last quarter and attributed to starvation. There have been a number of further mass mortalities in the same species between May and July. The first was at a property in Mt Isa, where five little red flying foxes were found dead under a white cedar tree. It was also reported that one sick bat was observed showing difficulty breathing. Bats were in poor nutritional condition, but forearm length:bodyweight ratios were not obtained. A presumptive diagnosis of starvation was made. The second event was near Inglewood, where there were 11-12 little red flying foxes found dead in a park over a two day period, one presented with bleeding from the mouth. There was nothing conclusive on histology from either case.

Four black flying foxes found dead under a tree near a race-course in July were presented for post-mortem. All were in very poor condition and significantly underweight. Two had abscesses and one had peritonitis. Lyssavirus and Hendra

virus were excluded in all of these mass mortality events.



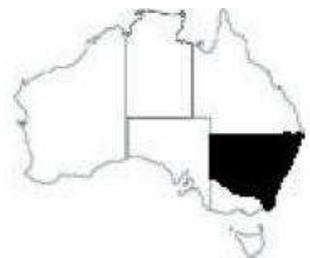
There was one confirmed chlorpyrifos poisoning event in 20 pigeons (species unknown) at Sarina in central Queensland. There have been a number of mortalities at a wetlands in Brisbane. Over a period of approximately nine months, ten pelicans and one ibis were found sick or dead. Despite a number of birds being submitted for necropsy no consistent findings have been identified. One pelican had a myocarditis. As these mortalities have been low-level and chronic, no toxicological investigations have been conducted so far.

There have been two mass mortalities of rainbow lorikeets in the Bundaberg area. In April, ten were found dead over a short period of time and in June another 30 were found dead. Pesticide screens done in both cases were negative. There has also been a couple of mass mortalities of crows. Twelve were found dead in a high school over a month and 20 were found dead in a park at the Gold Coast. Pesticide screens were not done. In most cases AI was excluded where birds were received for necropsy. In one case only fixed tissue was received for histology.

Hendra virus exclusions continued to be conducted regularly in the quarter, especially in coastal areas of the state and where fruit bats are in close contact with horses. (AHSQ Q2: <http://www.animalhealthaustralia.com.au/fms/Animal%20Health%20Australia/ADSP/AHSQ/AHSQ%20Q2%202010.pdf>.)

New South Wales

There has been an increase of ABLV testing as a result of Bat interactions with dogs and cats. It is thought that this is due to flying foxes expanding their range. In addition, publicity about Hendra



has increased. All recent testing in bats has been negative for ABLV.

30 dead galahs were reported at Burke, and some at Coonamble. No significant finding on necropsy and ND, AI and Chlamydia were all excluded. Waiting on toxicology results.

There have been some rainbow lorikeets found dead near Coffs Harbour. Some birds were found on ground ataxic and fluffed shortly before dying. Investigations found no significant histopathological lesions and ruled out ND, AI, West Nile Virus and Chlamydia. Tests were also negative for lead. Anecdotal reports indicate that some of these birds had ingested large amounts of bread. Inappropriate feeding by well intentioned people may have contributed to the problem.

A case of calicivirus was confirmed in a rabbit in the Sydney area.

ACT

There was a kangaroo cull in the urban area. This was due to an over population of the Eastern Grey Kangaroos, and some of the subsequent environmental pressure that's putting on other species in the same eco system.

The Grey-headed flying fox colony that was in the ACT through the summer periods has declined to about a third in size, and despite extremely cold weather during this winter there is still a surviving colony.

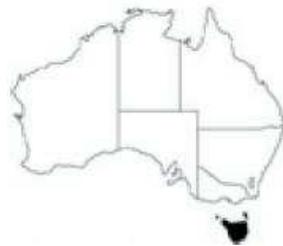
ACT is working with David Gordon from ANU on the project "The search for *E. albertii* - A 'New' Pathogen of Native Birds and People in Australia"

TAS

There have been flying fox sightings across the North of the state. Sightings at Deal Island and Flinders Islands (on the eastern side of Bass Strait), at Stanley and in Devonport (on the Northwest) are all felt to be reliable reports. This follows the submission of a flying fox found dead at Sandy bay (South of the state) in a fruit tree net. It is thought that these sightings are still a result of a spill over effect from the mainland.

Surveillance for hydatids in wallabies is currently occurring in Tasmania. Tasmania is provisionally free of hydatids or echinococcosis, and hunters are submitting any suspect cysts found in wallabies they shoot to rule out hydatids. Two wallabies were submitted for testing in the quarter, and the suspect lesions were filarial granulomas in the pericardium and lungs.

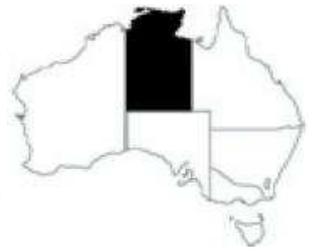
There has been another case of *Salmonella* Typhmuri DT160 in a sparrow found dead in southern Tasmania.



As expected, it appears that this strain is persisting in the wild population. It is interesting to note that, so far, no cases have occurred in the north of the state. The *Salmonella* event was first brought to the attention of the AWHN and government authorities through Dr David Obendorf and Dr James Harris, private veterinarians based in Hobart, Tasmania. They performed the initial investigation, and recognised this as being significant and worthy of further examination. The importance of nongovernment sources of information to support Australia's biosecurity is being increasingly recognised. This is especially so in the wildlife area where issues cross jurisdictional boundaries and the need for a One Health, collaborative-type approach has always been important.

Northern Territory

During the rainy season of the early months of the year, wildlife carers reported several cases of severe ulcerative lesions on the heads and faces of possums from the Darwin botanical gardens. The carers advised that the lesions were unusually severe and that the cases were not typical of exudative dermatitis syndrome of possum, with which they were familiar.



One affected adult male possum was submitted for post-mortem in March. The possum was in good body condition but had severe extensive ulceration of the skin involving the face, including the skin and conjunctivae surrounding the eyes, which appeared otherwise normal. Histology revealed full-thickness skin ulceration, with granulation tissue forming the ulcer bed. Gram's stain revealed mixed bacteria on the ulcerated surface. Special stains for fungi and acid-fast bacteria (eg. *Mycobacterium* sp) were negative. On bacterial culture of the skin lesions, a coagulase positive *Staphylococcus* sp was the predominant organism isolated. History, signalement, histology and bacteriology were all consistent with the described syndrome of stress-related exudative dermatitis of possums.

The definitive aetiology for this syndrome is uncertain; however, it is thought to involve stress and opportunistic bacterial infection, usually either *Staphylococcus* sp. or *Streptococcus* sp. It often affects adult males, possibly predisposed by the stress of fighting for new territory. Another predisposing factor may be high humidity and moisture. This case may be slightly atypical due to the severe nature of the lesions.

SA

Nothing to Report



INTERESTING CASE
The Australian Registry of Wildlife Health

CALL FOR INFORMATION - eyelid dissention in owls



This Barking Owl and Southern Boobook were brought to the attention of the Registry by a veterinarian in a wildlife park on Hamilton Island. A wild southern boobook was taken into care for hand raising and developed profoundly distended eyelids over the period of a few weeks. The animal was taken to a vet at Airlie Beach where 'worms' were removed from the eyelids. Approx 1-2 weeks later a wild barking owl was presented with the same lesions.

Both animals were euthanased upon advice from the environment department.

The Registry only received images of the affected animals. If you have any ideas of what might have caused these lesions or have seen similar cases, please contact us at the Registry (arwh@zoo.nsw.gov.au)

Photos courtesy of Matt Taylor

DISEASE WATCH HOTLINE
1800 675 888

The Disease Watch Hotline is a toll-free number that connects callers to the relevant state or

Wildlife Health in Australia is the newsletter of the Australian Wildlife Health Network. The newsletter aims to facilitate communication between people with an interest in Australian wildlife health issues. It is distributed to approximately 500 professionals and others around the country and overseas. We encourage you to show it to others and give us critical feedback on its contents.

If you wish to contribute to a future addition of the newsletter please send (in word format) articles to the AWHN email or postal address with your name and contact details supplied.

Send to: Karen Magee
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Phone: (02) 9932 4368
Fax: (02) 9932 4376
Email: kmagee@zoo.nsw.gov.au
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WILDLIFE COORDINATORS*

GOT SOMETHING TO REPORT?

We are interested in receiving reports of unusual or mass wildlife mortalities. If you see anything suspicious, please download and complete the submission form (endorsed by Animal Health Australia) found on our website (www.wildlifehealth.org.au) and send it to your local Dept of Primary Industries or your State Coordinator as listed below.

State or Territory	Coordinators	Notes	Address	Contact details
AAD (Australian Antarctic Division)	LESLIE FROST	Government Rep Appointed by the Director, Australian Antarctic Division (DEWR)	Australian Antarctic Division Channel Highway Kingston TAS 7050	Leslie.frost@aad.gov.au W: 03 6232 3414 F: 03 6232 3828 M: 0438 624 871
ACT	WILL ANDREW	Government Vet	ACT Veterinary Services Parks Conservation & Lands (Athlon) P.O. Box 158 Canberra ACT 2601	Will.andrew@act.gov.au W: 02 6207 2357 F: 02 6207 2093 M: 0419 239 073
NSW	DIANE RYAN	Government rep Appointed by CVO NSW	NSW Department of Primary Industries EMAI, PMB 8, Camden, NSW 2570	diane.ryan@industry.nsw.gov.au W: 02 4640 6333 F: 02 4640 6330 M: 0402 070914
NT	CATHY SHILTON	Government rep Appointed by CVO NT	Dept of Business, Industry and Resource Development Berrimah Vet Laboratories GPO Box 3000, Darwin, NT 0801	cathy.shilton@nt.gov.au W: 08 8999 2122
QLD	ANITA GORDON	Government rep Appointed by CVO QLD	QLD Dept Primary Industries Animal Research Institute 665 Fairfield Road Yeerongpilly, QLD 4105	anita.gordon@dpi.qld.gov.au W: 07 3362 9419 F: 07 3362 9440
TAS	OPEN			
SA	CELIA DICKASON	Government rep Appointed by CVO SA	Disease Surveillance, PIRSA Animal Health Flaxley Agricultural Centre P.O. Box 1571 Flaxley SA 5153	celia.dickason@sa.gov.au W: (08) 8391 7125 F: 08 8388 8455
VIC	MARK HAWES	Government rep/ Appointed by CVO VIC	Department of Primary Industries Primary Industries Research Victoria 475 Mickleham Rd, Attwood VIC 3049	mark.hawes@dpi.vic.gov.au W: 03 9217 4209 F: 03 9217 4399
WA	TOM HOLLINGSWORTH	Government rep Appointed by CVO WA	Animal Health Laboratory Department of Agriculture, WA Locked Bag 4 Bentley Delivery Service WA 6983	thollingsworth@agric.wa.gov.au W: 08 9780 6280 F: 08 9780 6136
CSIRO	JOHN BINGHAM	Veterinary Research Scientist	AAHL Private Bag 24 5 Portalington Rd Geelong VIC 3220	john.bingham@csiro.au W: 03 5227 5008 F: 03 5227 5565
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Australian Wildlife Health Network	KAREN MAGEE	Administrative Assistant	AWHN P.O. Box 20 Mosman NSW 2088	kmagee@zoo.nsw.gov.au W: 02 9932 4368 F: 02 9932 4376

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