ABLV BAT STATS

Australian Bat Lyssavirus Report – June 2023

Cases of ABLV infection - January to June 2023

There were 10 cases of Australian bat lyssavirus (ABLV) infection reported in bats in Australia between January and June 2023. This includes 5 from Queensland, 4 from South Australia and one from the Northern Territory. (Table 1).

Queensland

Four black flying-foxes and one yellow-bellied sheathtail bat were found to be positive for ABLV in the first half of 2023. Two of the black flying-foxes were found in separate incidents both hanging low in a tree. One, a lactating female, displayed aggression and foaming at the mouth, and the second also showed aggression. The third, a female, was rescued from a palm tree after being washed off a roof, and was aggressive with bubbling from the nostrils. The fourth was clinically normal but submitted for testing due to a possible dog contact. A yellow-bellied sheathtail bat was found on the ground being attacked by birds. It was lethargic and biting a cloth and was later found dead in a cage with other bats. An ABLV infection in a yellow-bellied sheathtail bat was also reported in 2022 in Queensland. These findings are unusual as ABLV is only rarely detected in microbats.

Northern Territory

One black flying-fox tested positive for ABLV. The bat had been euthanased after it was found being attacked by a dog. Immediately following the positive result, it was confirmed there was no human exposure and the dog was given a course of rabies vaccination.

Black flying fox
Photo: Andrew Mercer (CC)

Table 1: ABLV infection in Australian bats^

YEAR	NSW	NT	QLD	VIC	WA	SA	Total
1995 - 2000	10	1	83#+	0	0	0	94
2001	0	0	9	1	4	0	14
2002	4	0	10	2	1	0	17
2003	5	0	3	2	0	0	10
2004	5	0	6	1	0	0	12
2005	6	0	5	0	0	0	11
2006	2	0	4	0	0	0	6
2007	6	0	2	0	0	0	8
2008	0	0	0	0	0	0	0
2009	2	0	8	0	0	0	10
2010	0	0	8	0	1	0	9
2011	0	0	4	2	0	0	6
2012	1	0	3	0	0	1	5
2013	3	0	11	0	0	0	14
2014	5	1	14	1	11	0	32
2015	10	1	11	0	0	0	22
2016	5	1	8	1	0	0	15
2017	4	0	19	3	2	0	28
2018	5	0	5	1	0	0	11
2019	6	0	1	0	0	0	7
2020	5	0	9	4	0	0	18
2021	10	1	17	5	0	2	35
2022	1	1	8	1	0	1	12
2023 (to June)	0	1	5	0	0	4	10
Total	95	7	253	25	19	8	407

^ Infection confirmed by FAT, PCR, IHC and/or virus isolation. ACT and TAS have not recorded any cases of ABLV infection that satisfy this case definition.
# A BFF from QLD was diagnosed retrospectively in 1996, when ABLV was first recognised.
+ Higher numbers of ABLV infected bats were associated with peak years of testing in 1997-1998.

South Australia

South Australia recorded four positive ABLV cases, all in grey-headed flying-foxes. Three had a history of neurologcal signs. One was found low in a tree gnashing it's teeth and unable to close its eye, the other two were both in care with rehabilitators and developed neurological signs, including tongue protrusion and vocalisation. No history was available for the fourth bat except that it presented to a veterinary clinic. This is a relatively high number of ABLV infections for SA which recorded a total of only 3 infections in 2021 and 2022. Prior to that there had only been one infection recorded in 2012 (Table 1).

Human contact

Potentially infectious contact with humans was reported for 3 of the ABLV infected flying-foxes. Clinical advice was provided by an experienced publich health official for all cases.

Grey-headed flying-foxes
Photo: Paislie Hadley/ Flickr (CC)

Why are bats submitted for ABLV testing?

Bats are submitted for ABLV testing for a variety of reasons. A common reason is contact between the bat and a person with the potential for ABLV transmission (e.g. a bite or scratch). Bats are also regularly submitted following contact with a pet dog or cat (Figure 1). Bats displaying unusual or aggressive behaviour or other neurological signs may be tested; these signs can occur with ABLV infection but can also be due to a number of other diseases. Bats that show other clinical signs e.g. respiratory signs, bats that die or are euthanased due to trauma, and bats that are found dead may also be submitted for testing.

Figure 1: ABLV tested bats – Contact with people and pets

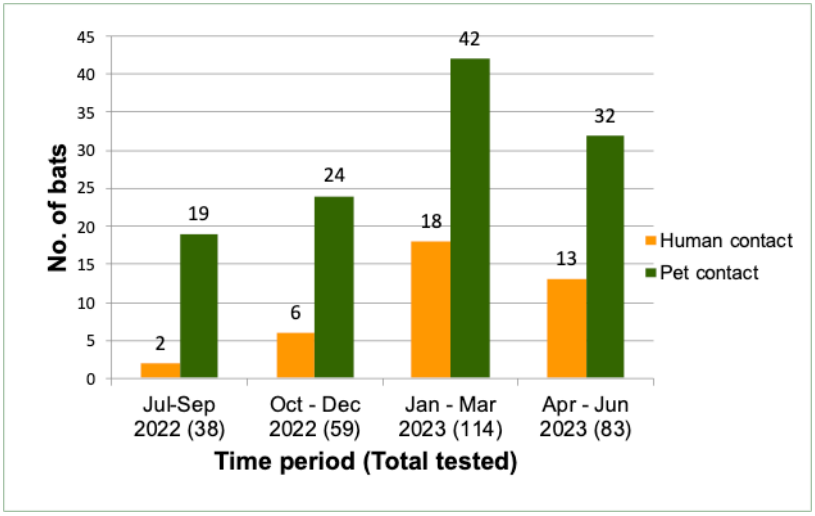


Figure 1 presents reported human-bat contacts which, based on Young & McCall 2010,[1] is an underestimate of the true contact frequency. Not all bat contact is reported, and for the majority of reports the bat is not available for testing.

If bats had both human and pet contact, they are only reported as human contact in the figure.

ABLV prevalence in bats and public health significance

There are no recent surveys on the prevalence of ABLV infection in wild bats. Surveys of wild-caught bats in the early 2000s indicated an ABLV prevalence in the wild bat population of less than 1%.[2] ABLV infection is more common in sick, injured and orphaned bats, especially those with neurological signs.[3] People are more likely to have contact with bats that are unwell or debilitated, as these bats may be found on or near the ground.[4]

Hill's sheathtail bat
Photo: Nathan Johnson/ Flickr (CC)

ABLV infection causes a range of clinical signs in bats, which can include abnormal behaviour such as uncharacteristic aggression, paralysis or paresis, and seizures. The behavioural changes may increase the likelihood of a person or pet being bitten or scratched when coming in contact with the bat. The likelihood of a person developing ABLV disease from contact with a bat is influenced by a number of factors including whether the bat was ABLV-infected, the type of contact e.g. bite or scratch, the vaccination status of the person, and whether the person sought medical attention.

ABLV prevalence in bats submitted for testing

Some of the bats that come into contact with people or pets are tested for ABLV. The percentage of ABLV infection in bats submitted for testing is of interest as an indicator of public exposure, however it is also heavily influenced by factors affecting which bats are submitted for testing.

A total of 203 bats were tested for ABLV in Australia between January and June 2023 (Table 2). This is a greater number of bats tested compared to the same period in 2022 (161 bats). There were 10 cases of ABLV infection reported in bats (4.9% of the bats submitted for testing) (Table 3). There were 9 cases in flying-foxes (6.4% of flying-foxes tested), and 1 in a microbat (1.6% of microbats tested). As described above, testing of unwell bats is not representative of the whole bat population; consequently these results over-estimate the level of ABLV infection in the wider bat population.

Table 2: ABLV testing by bat species (Jan - Jun 2023)

Species	No. tested	No. ABLV infected
Flying-foxes, blossom & tube-nosed bats		
Pteropus alecto/Black Flying-fox	60	5
Pteropus poliocephalus/Grey-headed Flying-fox	62	4
Pteropus scapulatus/Little Red Flying-fox	4	0
Pteropus conspicillatus/Spectacled Flying-fox	2	0
Pteropus spp.	12	0
Insectivorous bats (microbats)		
Nyctophilus geoffroyi/Lesser Long-eared Bat	11	0
Chalinolobus gouldii/Gould's Wattled Bat	10	0
Saccolaimus flaviventris/Yellow-bellied Sheathtail Bat	7	1
Miniopterus australis/Little Bent-wing Bat	4	0
Macroderma gigas/Ghost Bat	2	0
Vespadelus vulturnus/Little Forest Bat	3	0
Nyctophilus spp.	2	0
Chalinolobus morio/Chocolate Wattled Bat	1	0
Nyctophilus arnhemensis/Arnhem Long-eared Bat	1	0
Nyctophilus walkeri/Pygmy Long-eared Bat	1	0
Pipistrellus adamsi/Cape York Pipistrelle	1	0
Rhinolophus megaphyllus/Eastern Horseshoe Bat	1	0
Vespadelus regulus/Southern Forest Bat	1	0
Vespertilionidae spp.	1	0
Microbat; species not identified	17	0
TOTAL	**203**	**10**

Little red flying-fox
Photo: John/ Flickr (CC)

**ABLV Bat Stats* is published twice a year. The June issue presents data from the 6 month period of January to June. The December issue presents 12 months of data for the calendar year.

Chocolate wattled bat
Photo: Lindy Lumsden

Table 3: ABLV infection (%) in bats submitted for testing (Jan - Jun 2023)

	No. tested	No. infected	% infected[+]
Flying-foxes	140	9	6.4%
Microbats	63	1	1.6%
TOTAL	**203**	**10**	**4.9%**

[+] This figure represents the percentage of ABLV infection in the bats tested. The level of ABLV infection in the wider bat population is estimated to be significantly lower.

Bat facts

- **ABLV is a virus** that infects Australian flying-foxes and insectivorous bats.
- **ABLV is closely related to**, but distinct from rabies virus.
- **ABLV can infect people and other mammals with a fatal outcome.** ABLV infection has led to the deaths of three people, two horses and many bats in Australia.
- **Community members should not handle bats.** If you find an injured or sick bat, contact a wildlife rehabilitation organisation or your local veterinarian.
- People trained in the care of bats **should be vaccinated and always use appropriate protection** when interacting with bats.
- **ABLV is transmitted** by the saliva of an infected animal introduced via a bite or scratch, or by contamination of mucous membranes or broken skin. In the event of a bat bite, scratch or other significant contact, **seek medical attention URGENTLY**. **Bite or scratch wounds** should immediately be washed thoroughly with soap and copious water for approximately 15 minutes and a virucidal antiseptic such as an iodine based antiseptic applied.* Bat saliva in the eyes or mouth should be rinsed out immediately and thoroughly with water.
- **For more information** contact your local Public Health agency for advice.
- **ABLV can also be transmitted to other mammals.** Prevent pets and other animals from coming into contact with bats. If an animal might have been bitten or scratched by a bat, **seek urgent veterinary advice.**
- ABLV is a nationally notifiable disease in Australia. **If you suspect a bat is infected with ABLV** contact your department of agriculture or primary industries, or call the Emergency Animal Disease Hotline on 1800 675 888.
- **Where to find more information:** See page 5 & 6.

* Department of Health. Rabies Virus and Other Lyssavirus (including Australian Bat Lyssavirus) Exposures and Infections. CDNA National Guidelines for Public Health Units. Canberra. 2022. Available from https://www.health.gov.au/resources/publications/rabies-and-other-lyssavirus-cdna-national-guidelines-for-public-health-units

Clinical signs of ABLV

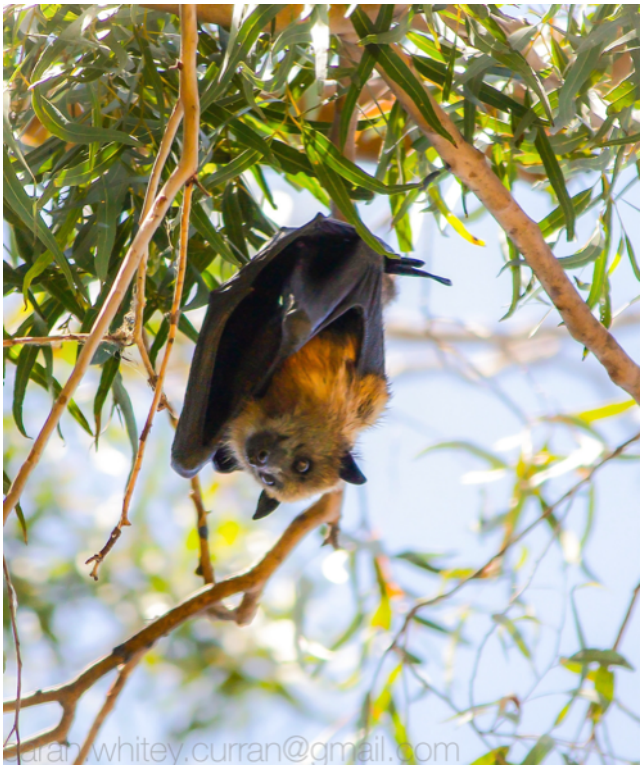
An ABLV infected bat may display any of these clinical signs:

- Abnormal behaviour such as excitation / agitation / aggression
- Paralysis or paresis
- Unprovoked attacks
- Unusual vocalisation
- Inability to fly
- Convulsions / seizures / tremors

Apparently healthy bats with normal behaviours may still be infected with ABLV

DO NOT ATTEMPT TO HANDLE an injured, unwell or aggressive bat

REPORT it to your local wildlife service, vet or bat rehabilitation group



Grey-headed flying-fox
Photo: Sarah Curran

Recent news and publications

Immune response after rabies pre-exposire prophylaxis and a booster dose in Australian bat carers

Guo, et al (2023). *Zoonoses and Public Health,* https://onlinelibrary.wiley.com/doi/10.1111/zph.13048

Australian bat lyssavirus reminder [NT]

June 2023 Vet News NT: "Northern Territory (NT) vets are reminded to make sure they are familiar with the NT Australian bat lyssavirus (ABLV) guidelines for vets, following a positive case of ABLV in a bat found in Darwin. The bat displayed neurological signs and was submitted to BVL for post mortem and ABLV was confirmed testing via Australian Centre for Disease Preparedness (formerly AAHL). Should you be aware of an unwell bat and suspect ABLV, please contact the Emergency Animal Disease hotline on 1800 675 888… Vets are reminded that pre-exposure prophylaxis with rabies vaccine is recommended for people who may receive bits or scratches from bats - including veterinarians, veterinary nurses and people working with wildlife…"

Lyssavirus warning after sick bat found on Gold Coast

April 2023 myGC: "A public health alert has been issued for the fatal Australian bat lyssavirus after a flying fox was found with the disease on the Gold Coast. Anyone who came into contact with the animal found at the Southern Beaches Community Garden in Tugun should seek urgent medical assistance, Gold Coast Public Health said on Tuesday. The sick bat was found hanging low in a tree in the garden on April 11…"

Lesser long-eared bat
Photo: D Whitford © Australian Museum

Are you interested in bat health?

Wildlife Health Australia collates recent media articles and publications relating to bat health into a monthly **'Bat News'** email. If you would like to receive the monthly email, please contact WHA: admin@wildlifehealthaustralia.com.au

Grey-headed flying-fox
Photo: Leo/ Flickr (CC)

Where to find information

Wildlife Health Australia (WHA)
www.wildlifehealthaustralia.com.au

- Wildlife disease fact sheets, including *Australian Bat Lyssavirus* and *Zoonoses in Australian Bats*
- Links: Useful links to wildlife and animal health organisations and agencies in Australia and overseas

State/Territory departments of agriculture, health and environment

For links to agency websites see:
State/ Territory Australian Bat Lyssavirus Resources

Commonwealth Department of Health and Aged Care

- For current information for medical professionals, see the Series of National Guidelines on Rabies & ABLV: https://www.health.gov.au/resources/publications/rabies-and-other-lyssavirus-cdna-national-guidelines-for-public-health-units
- For vaccination information contact your local or regional Public Health Unit, or see the immunisation handbook: https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/rabies-and-other-lyssaviruses

AUSVETPLAN

For current policy on surveillance and management see AUSVETPLAN - Lyssaviruses:
https://animalhealthaustralia.com.au//wp-content/uploads/dlm_uploads/2021/05/AUSVETPLAN-ResponseStrategy_Lyssaviruses-1.pdf

ABLV BAT STATS

WHA Bat Health Focus Group

This document has been approved by the Wildlife Health Australia (WHA) Bat Health Focus Group. Using a collaborative One Health approach, the Bat Health Focus Group considers bat health issues in relation to the broader context of biosecurity, public health, livestock health and environmental impacts in Australia. Members come from organisations including Australian and State Government departments of agriculture, public health and environment; CSIRO Australian Centre for Disease Preparedness, universities, the Australasian Bat Society and the Australian Speleological Federation. Members include veterinarians, biologists, ecologists, virologists, epidemiologists and wildlife/bat carers.

Information sources

This report presents the latest information on ABLV testing across Australia. Information has been made available by CSIRO Australian Centre for Disease Preparedness, Janine Barrett PhD thesis 2004 (with permission), QLD Health, zoo & wildlife veterinarians, universities, Wildlife Health Australia members, and State/Territory WHA Coordinators (representatives of Chief Veterinary Officers), and is collated by Wildlife Health Australia. More detailed information is available in the electronic Wildlife Health Information System (eWHIS).

References

[1] Young MK & McCall BJ (2010). Potential exposure to Australian bat lyssavirus in South East Queensland: What has changed in 12 years? *Comm Dis Intell,* 34(3), 334-8 www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdi3403l.htm

[2] Field HE (2005). The Ecology of Hendra virus and Australian bat lyssavirus, PhD thesis, The University of Queensland https://espace.library.uq.edu.au/view/UQ:13859

[3] Barrett J (2004). Australian Bat Lyssavirus, PhD thesis, The University of Queensland https://espace.library.uq.edu.au/view/UQ:9486

[4] McCall B, Field HE, Smith GA, Storie GJ, Harrower BJ (2005). Defining the risk of human exposure to Australian bat lyssavirus through potential non-bat animal infection. *Comm Dis Intell,* 29(2), 200-203 www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdi2902k.htm

State/Territory WHA Coordinators

Contact your state/territory department of primary industries/agriculture or WHA Coordinator for more information on ABLV testing, or to report a suspected ABLV infected bat.

STATE	CONTACT	PHONE	EMAIL
ACT	Kyeelee Driver	(02) 6207 2357	kyeelee.driver@act.gov.au
NSW	Cecily Moore	0437 405 202	cecily.moore@dpi.nsw.gov.au
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