

ABLV BAT STATS



Australian Bat Lyssavirus Report - June 2021

Cases of ABLV infection - January to June 2021

There were 27 cases of Australian bat lyssavirus (ABLV) infection reported in bats in Australia between January and June 2021. This includes 14 from Queensland, 9 from New South Wales, 2 from South Australia and 2 from Victoria (Table 1).

Queensland

Nine little red flying-foxes (*Pteropus scapulatus*), four black flying-foxes (*P. alecto*) and one grey-headed flying-fox (*P. poliocephalus*) were found to be infected with ABLV. The majority were from South East Queensland (SEQ), with one from Far North Queensland. The high number is in part due to a cluster of ABLV in little red flying-foxes in SEQ in the first 4 months of the year (see page 3). The majority of cases presented with neurological signs including quiet demeanour, aggression, self-mutilation, respiratory distress, difficulty swallowing, head tremor and paralysis. Several were found moribund on the ground. One of the infected bats was submitted for testing due to contact with a pet dog.

New South Wales

Five grey-headed flying-foxes, three little red flying-foxes and one black flying-fox were found to be infected with ABLV, from the south coast to the north-east of the state. Most of these bats showed neurological signs including aggression, unusual vocalisation, licking at the air and paralysis. One also had respiratory difficulties.

[Continued overleaf]



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

Table 1: ABLV infection in Australian bats as confirmed by FAT, PCR, IHC and/or virus isolation[^]

YEAR	NSW	NT	QLD	VIC	WA	SA	Total
1995	0	0	1 [#]	0	0	0	1
1996	1	0	9	1	0	0	11
1997	7	1	27 ⁺	0	0	0	35
1998	1	0	26 ⁺	0	0	0	27
1999	0	0	6	0	0	0	6
2000	1	0	14	0	0	0	15
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 (to Jun)	9	0	14	2	0	2	27
Total	93	4	237	21	19	3	377

[^] ACT and TAS have not recorded any cases of ABLV infection that satisfy this case definition.

[#] ABLV was first recognised in 1996. A black flying-fox from Townsville, QLD that died in 1995 was subsequently diagnosed with ABLV.

⁺ Higher numbers of ABLV infected bats were associated with peak years of testing in 1997-1998.

* Numbers adjusted since Dec 2020 issue of ABLV Bat Stats.

Victoria

Two grey-headed flying-foxes from the Melbourne region were found to be infected with ABLV. One was aggressive, became lethargic with watery eyes, and died. The other showed unusual behaviour (biting when undisturbed) and was unable to grip with its feet.

South Australia

Two grey-headed flying-foxes from the Adelaide region were found to be infected with ABLV. This is only the second time that ABLV infection has been found in a bat in SA; the previous case was in 2012 (Table 1). One of the bats was in a tree during the day, screeching, and was aggressive. The other bat presented as a suspected electrocution, with blistered areas on the limbs and wings.

Human contact

Potentially infectious contact with humans was reported for eight of the ABLV infected flying-foxes reported. In these cases clinical advice was provided by an experienced public health official.



Bent-winged bats Photo: Ilya Fomin / iNaturalist (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

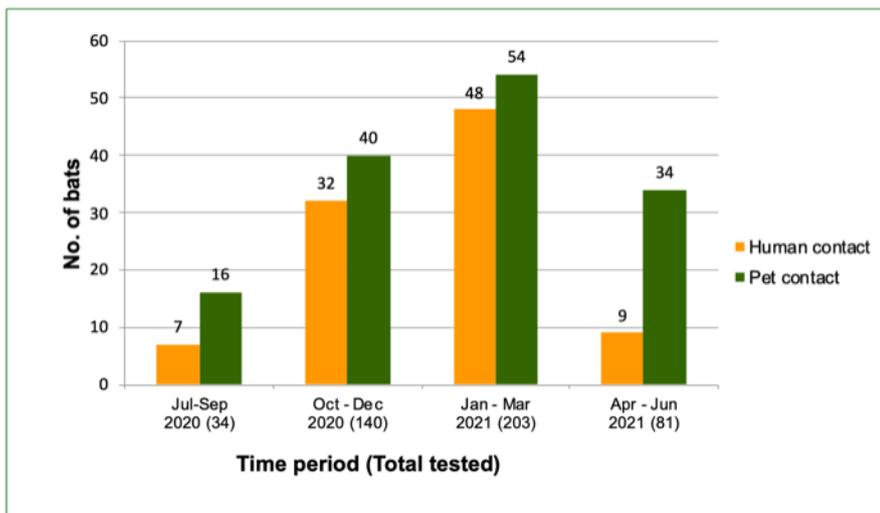


Figure 1 presents reported human-bat contacts which, based on Young & McCall 2010,¹ is an underestimate of the true contact frequency. Not all bat contact is reported, and for the majority of reports the bat is not available for testing. Some of the bats that had human contact also had contact with a pet (not shown in the graph).

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



Little red flying-foxes Photo: shellac / 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 284 bats were tested for ABLV in Australia between January and June 2021 (Table 2). Twenty-seven cases of ABLV infection were reported in bats (9.5% of the bats submitted for testing) (Table 3). 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.

The number of bats submitted for testing is higher than normal, partly due to a widespread paralysis event in flying-foxes in northern NSW and SEQ in the earlier part of the year.⁵ The majority of bats examined from this event were not infected with ABLV, and there is no evidence of an infectious cause. A toxic or metabolic cause is considered most likely. The number of ABLV cases in bats is also high. It includes a cluster of cases in little red flying-foxes (LRFF) in SEQ.⁶ This could be a real increase in infections in LRFF in that area, or alternatively a typical prevalence but increased detection of sick flying-foxes due to a recent influx of LRFF into more populated areas.

Table 2: ABLV testing by bat species (Jan - Jun 2021)

Species	No. tested	No. ABLV infected
Flying-foxes, blossom & tube-nosed bats		
<i>Pteropus poliocephalus</i> /Grey-headed flying-fox	104	10
<i>Pteropus alecto</i> /Black flying-fox	56	5
<i>Pteropus scapulatus</i> /Little red flying-fox	47	12
<i>Pteropus conspicillatus</i> /Spectacled flying-fox	2	0
<i>Pteropus</i> sp.	3	0
Insectivorous bats (microbats)		
<i>Chalinolobus gouldii</i> /Gould's wattled bat	7	0
<i>Miniopterus orianae oceanensis</i> /Eastern bent-wing bat	12	0
<i>Rhinolophus megaphyllus</i> /Eastern horseshoe bat	12	0
<i>Ozimops lumsdenae</i> /Northern free-tailed bat	5	0
<i>Nyctophilus geoffroyi</i> /Lesser long-eared bat	4	0
<i>Vespertilionidae</i> sp.	4	0
<i>Chalinolobus morio</i> /Chocolate wattled bat	2	0
<i>Miniopterus orianae orianae</i> /Northern bent-wing bat	2	0
<i>Vespadelus vulturnus</i> /Little forest bat	2	0
<i>Nyctophilus bifax</i> /Eastern long-eared bat	1	0
<i>Nyctophilus gouldi</i> /Gould's long-eared bat	1	0
<i>Ozimops planiceps</i> /South-eastern free-tailed bat	1	0
<i>Scotorepens greyii</i> /Little broad-nosed bat	1	0
<i>Vespadelus regulus</i> /Southern forest bat	1	0
<i>Rhinolophidae</i> /Horseshoe bats	1	0
<i>Vespadelus</i> sp.	1	0
Microbat; species not identified	15	0
TOTAL	284	27



Black flying-fox Photo: Duncan McCaskill / Flickr (CC)



Little forest bat
Photo: Chris Lindorff / iNaturalist (CC)

Table 3: ABLV infection (%) in bats submitted for testing (Jan-Jun 2021)

	No. tested	No. infected	% infected*
Flying-foxes, blossom & tube-nosed bats	212	27	12.7%
Microbats	72	0	0%
TOTAL	284	27	9.5%

* 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 care 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 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 Watch 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. 2014. Available from www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-abvl-rabies.htm

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
CARER GROUP**



Spectacled flying-foxes Photo: traveltt / Flickr (CC)

Recent news and publications

ABLV in bats (selection of news)

Qld:

27/02/2021 Ipswich First: West Moreton Health issues Public Health Alert <https://www.ipswichfirst.com.au/west-moreton-health-issues-public-health-alert-2/>

9/01/2021 ABC News: Bat warning issued after officials detect three cases of lyssavirus in Queensland in one month <https://www.abc.net.au/news/2021-01-09/queensland-bat-with-lyssavirus-found-in-east-brisbane/13044518>

NSW:

22/02/2021 Hawkesbury Gazette: Don't touch flying-foxes <https://www.echo.net.au/2021/01/dont-touch-flying-foxes/>

5/01/2021 EchoNet Daily: Lyssavirus warning as residents advised against touching bats <https://www.hawkesburygazette.com.au/story/7136773/lyssavirus-warning-as-residents-advised-against-touching-bats/>

SA:

8/04/2021 Nine News: Two cases of exposure to bat lyssavirus prompt new warnings in South Australia <https://www.9news.com.au/national/south-australias-department-of-health-and-wellbeing-has-warned-communities-of-the-transmittable-australian-bat-lyssavirus/fbbdc40c-ec10-4b89-8376-b7b1c2af9c74>

Australian bat lyssavirus: analysis of national bat surveillance data from 2010 to 2016

Iglesias R et al (2020). Australian bat lyssavirus: analysis of national bat surveillance data from 2010 to 2016. *Viruses* <https://www.mdpi.com/1999-4915/13/2/189/htm>

Abstract: "...bats are monitored for ABLV and a national dataset is collated and maintained by Wildlife Health Australia. The 2010–2016 dataset was analysed... to identify predictors of infection status in bats and the factors associated with human exposure to bats. In common with previous passive surveillance studies, we found that little red flying-foxes... are more likely than other species to be infected with ABLV. In the four Australian mainland species of flying-fox, there are seasonal differences in infection risk that may be associated with reproductive cycles, with summer and autumn the seasons of greatest risk. The risk of human contact was also seasonal, with lower risk in winter..."

Clinical progression of Australian bat lyssavirus captured by video

Barrett J & Koller R (2020). Clinical progression of Australian bat lyssavirus captured by video. *Animal Health Surveillance Quarterly*, 25(4), 7-8 <http://www.sciquest.org.nz/node/165634>

AUSVETPLAN Response Strategy: Lyssaviruses

The AUSVETPLAN Response Strategy on lyssaviruses has been revised (Version 5.0, 2021) and is now available on the [Animal Health Australia website](#) ([direct PDF link](#)). There is now a single strategy document for Australian bat lyssavirus, rabies and other lyssaviruses. This version includes a new appendix on management of ABLV risk in bats in captivity and care.

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: TheB@t / 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*
- **Resources**: News and information on specific diseases and hosts
- **Links**: Useful links to wildlife and animal health organisations and agencies in Australia and overseas

State/Territory departments of agriculture, health and environment

Visit the agency websites, or see WHA Resources for a summary of available information & links:

[Queensland >>](#)

[New South Wales & ACT >>](#)

[Victoria >>](#)

[South Australia, Western Australia & Northern Territory >>](#)

Commonwealth Department of Health

- For current Department of Health information for medical professionals, see the Series of National Guidelines on Rabies & ABLV: www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-abvl-rabies.htm
- For **vaccination** information contact your local or regional Public Health Unit, or see the immunisation handbook: <https://immunisationhandbook.health.gov.au>

AUSVETPLAN

For current policy on surveillance and management consult AUSVETPLAN - Lyssaviruses: <https://animalhealthaustralia.com.au/ausvetplan/>

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.

For further information please contact WHA on admin@wildlifehealthaustralia.com.au

Information sources

This report presents the latest information on Australian bat lyssavirus (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): www.wildlifehealthaustralia.com.au

References

- 1 Young MK & McCall BJ (2010). Potential exposure to Australian bat lyssavirus in South East Queensland: What has changed in 12 years? *Communicable Diseases Intelligence*, 34(3), 334-8
- 2 Field HE (2005). "The Ecology of Hendra virus and Australian bat lyssavirus", PhD thesis, The University of Queensland
- 3 Barrett J (2004). "Australian Bat Lyssavirus", PhD thesis, The University of Queensland
- 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. *Communicable Diseases Intelligence*, 29(2), 200-203
- 5 Cox-Witton K, Gordon A (2021). Paralysis event in flying foxes in Queensland and New South Wales. *Animal Health Surveillance Quarterly*, 26(1), 25-26
- 6 Barrett J (2021). Atypical cluster of lyssavirus (ABLV) infections in little red flying foxes in South East Queensland. *Animal Health Surveillance Quarterly*, 26(1), 7-8

State/Territory WHA Coordinators

If you would like information on ABLV testing or wish to report a suspected ABLV infected bat please contact your State/Territory Department of Primary Industries/Agriculture or local WHA Coordinator (below).

STATE	CONTACT	PHONE	EMAIL
ACT	Wendy Townsend	(02) 6205 3737	wendy.townsend@act.gov.au
NSW	Claire Harrison	(02) 6391 3490	claire.harrison@dpi.nsw.gov.au
NT	Cathy Shilton	(08) 8999 2122	cathy.shilton@nt.gov.au
QLD	Anita Gordon	(07) 3708 8756	anita.gordon@daf.qld.gov.au
SA	Allison Crawley	(08) 8429 0866	allison.crawley@sa.gov.au
TAS	Annie Philips	(03) 6165 4549	annie.philips@dipw.tas.gov.au
VIC	Mark Hawes	(03) 9032 7275	mark.hawes@agriculture.vic.gov.au
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