

ABLV BAT STATS



Australian Bat Lyssavirus Report - December 2021

Cases of ABLV infection - January to December 2021

There were 35 cases of Australian bat lyssavirus (ABLV) infection reported in bats in Australia between Jan and Dec 2021. This includes 17 from Queensland, 10 from NSW, 5 from Victoria, 2 from South Australia and 1 from Northern Territory (Table 1).

Queensland

Nine little red flying-foxes (LRFF, *Pteropus scapulatus*), 4 black flying-foxes (BFF, *P. alecto*) and one grey-headed flying-fox (GHFF, *P. poliocephalus*) were found to be infected with ABLV in the first half of 2021 (see [ABLV Bat Stats June 2021](#) for more details). The high number was in part due to a cluster of ABLV in LRFFs in SEQ. In the second half of 2021, one LRFF, one BFF and one GHFF were found to be infected with ABLV. One rescued LRFF pup became aggressive with other pups after three weeks in care, then died suddenly. A pregnant GHFF was found hanging low in a tree and was biting the towel during handling, then became lethargic with increased respiratory effort and foaming at the mouth. The BFF was a subadult male found on the ground, which initially showed slow movement, incoordination and reduced alertness. Two hours later it became very aggressive with abnormal behaviour including biting incessantly at its forearm. The signs progressed and the bat was euthanased.

New South Wales

Five GHFFs, three LRFFs and one BFF were found to be infected with ABLV from Jan-June 2021 ([ABLV Bat Stats June 2021](#)). In the second half of 2021, a subadult male BFF from northern NSW was found low in a bush, with no evidence of trauma. Over 36 hours the bat became unable to hang, had progressive paralysis, rigid limbs, and lack of tongue movement and corneal reflex. The bat was subsequently euthanased.



[Continued overleaf]

Large-footed myotis
Photo: Isaac Clarey (CC)

Table 1: ABLV infection in Australian bats[^]

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	10	1	17	5	0	2	35
Total	94	5	240	24	19	3	385

[^] 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.

Victoria

ABLV cases included 2 GHFFs in the first half of 2021, and 3 GHFFs from southern Victoria in the second half. A female fell from a tree and began seizing. The seizures continued and the bat began biting itself and was very reactive to stimuli, and was euthanased. A second bat died after showing neurological signs, and another died in care after developing paralysis.

South Australia

Two grey-headed flying-foxes were found to be infected with ABLV earlier in the year. This was only the second time that ABLV infection had been found in a bat in SA (Table 1). There were no further cases in SA this year.

Northern Territory

A LRFF in the Darwin region was found hanging close to the ground and had head tremors and incoordination, and was euthanased.

Human contact

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



Little red flying-fox
Photo: Paisley 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

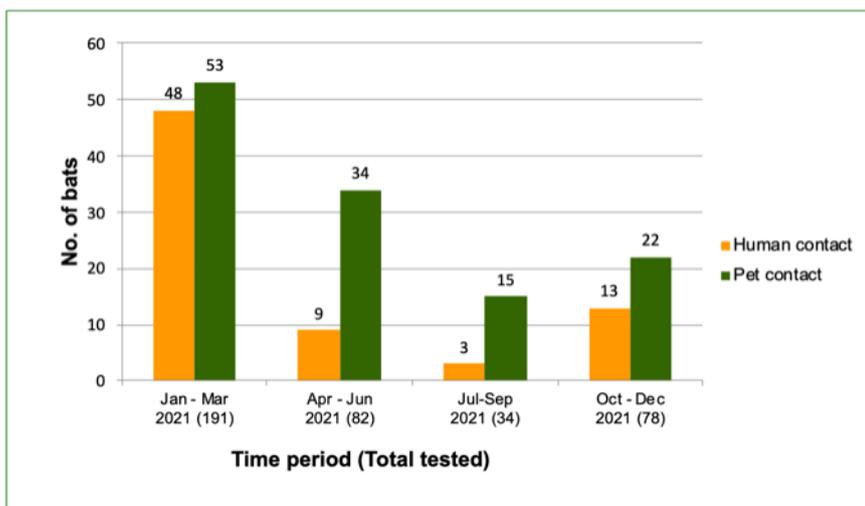


Figure 1 presents reported human-bat contacts which, based on Young & McCall 2010,¹ is an underestimate of the true contact frequency. Not all bat contact is reported, and for the majority of reports the bat is not available for testing. Some of the bats that had human contact also had contact with a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



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.

Lesser long-eared bat
Photo: Margot Oorebeek (CC)

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 385 bats were tested for ABLV in Australia between January and December 2021 (Table 2).^{*} There were 35 cases of ABLV infection reported in bats (9.1% 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 has dropped below the usual towards the end of the year, after an unusually high number of submissions in the first part of the year (see [ABLV Bat Stats June 2021](#)). The paralysis event that occurred last summer in northern NSW and southeast Qld is recurring, so numbers may increase again over the remaining summer months (see [WHA website](#)).⁵

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

Species	No. tested	No. ABLV infected
Flying-foxes		
<i>Pteropus poliocephalus</i> /Grey-headed flying-fox	133	14
<i>Pteropus alecto</i> /Black flying-fox	97	7
<i>Pteropus scapulatus</i> /Little red flying-fox	58	14
<i>Pteropus conspicillatus</i> /Spectacled flying-fox	2	0
<i>Pteropus</i> sp.	9	0
Insectivorous bats (microbats)		
<i>Miniopterus orianae oceanensis</i> /Eastern bent-wing bat	12	0
<i>Chalinolobus gouldii</i> /Gould's wattled bat	10	0
<i>Nyctophilus geoffroyi</i> /Lesser long-eared bat	8	0
<i>Vespertilionidae</i> sp.	6	0
<i>Ozimops lumsdenae</i> /Northern free-tailed bat	5	0
<i>Scotorepens greyii</i> /Little broad-nosed bat	3	0
<i>Chalinolobus morio</i> /Chocolate wattled bat	2	0
<i>Miniopterus orianae orianae</i> /Northern bent-wing bat	2	0
<i>Nyctophilus bifax</i> /Eastern long-eared bat	2	0
<i>Vespadelus vulturnus</i> /Little forest bat	2	0
<i>Hipposideros ater</i> /Dusky leaf-nosed bat	1	0
<i>Macroderma gigas</i> /Ghost 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>Rhinolophus megaphyllus</i> /Eastern horseshoe bat	1	0
<i>Vespadelus regulus</i> /Southern forest bat	1	0
<i>Molossidae</i> sp.	1	0
<i>Pipistrellus</i> sp.	1	0
<i>Rhinolophidae</i> sp.	1	0
<i>Vespadelus</i> sp.	1	0
Microbat; species not identified	23	0
Bat - unidentified	1	0
TOTAL	385	35



Grey-headed flying-foxes Photo: Keren Cox-Witton

* *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.

Some data from this period have not yet been reported due to delays with data submission caused by COVID-19.



Eastern free-tailed bat
Photo: Victorian DELWP / Flickr ([CC](#))

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

	No. tested	No. infected	% infected ⁺
Flying-foxes	299	35	11.7%
Microbats	86	0	0%
TOTAL	385	35	9.1%

⁺ 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

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

See WHA Resources for links to agency websites:

[Queensland >>](#)

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

[Victoria >>](#)

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

Commonwealth Department of Health

- For current 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 see AUSVETPLAN - Lyssaviruses: <https://animalhealthaustralia.com.au/ausvetplan/>

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Recent news and publications

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
<http://www.sciquest.org.nz/node/165925>

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

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,

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
- 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. *Comm Dis Intell*, 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

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	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@dpipwe.tas.gov.au
VIC	Mark Hawes	(03) 9032 7275	mark.hawes@agriculture.vic.gov.au
WA	Siva Thayaparan	0472 874 923	sivapiragasam.thayaparan@dpird.wa.gov.au



Wildlife Health Australia

Suite F, 32 Suakin Drive, Mosman NSW 2088
Phone: (02) 9960 6333
email: admin@wildlifehealthaustralia.com.au
www.wildlifehealthaustralia.com.au