

ABLV BAT STATS



Australian Bat Lyssavirus Report - December 2019

Cases of ABLV infection - January to December 2019

Seven cases of Australian bat lyssavirus (ABLV) infection were reported in bats in Australia between January and December 2019, six from New South Wales and one from Queensland (Table 1). These cases are described below.

New South Wales

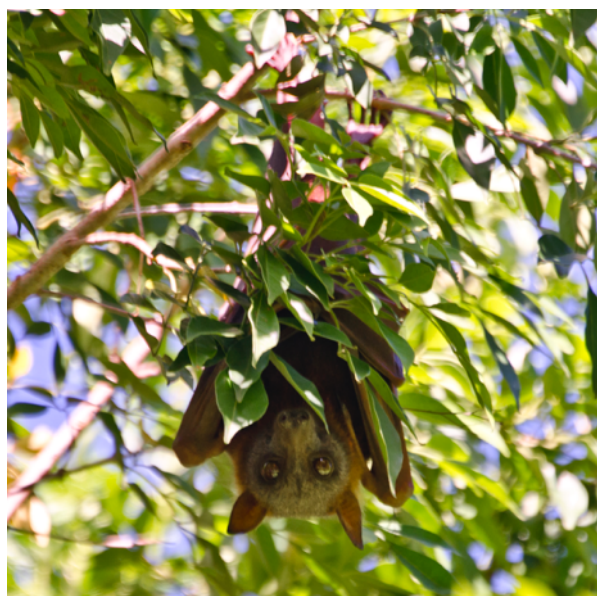
Six flying-foxes from various areas of NSW were found to be infected with ABLV in the first half of 2019. These were a little red flying-fox (*Pteropus scapulatus*) and a female flying-fox (*Pteropus* sp.) from north-eastern NSW, a sub-adult male little red flying-fox from a colony affected by a heat wave, a grey-headed flying-fox (*P. poliocephalus*) injured by a dog, and two flying-foxes submitted for testing due to potentially infectious contact with a human. See ABLV Bat Stats June 2019 for further details.

Queensland

In the second half of the year, a black flying-fox (*P. alecto*) from north Qld was found to be infected with ABLV. The bat was submitted for testing due to contact with a person.

Human contact

Potentially infectious contact with humans was reported for five of the seven ABLV infected flying-foxes reported for January to December 2019. In each case clinical advice was provided by an experienced public health official.



Little red flying-fox

Photo: Paislie Hadley / 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 ^a	0	0	0	10
2010	0	0	8	0	1	0	9
2011	0	0	4 ^a	2	0	0	6
2012	1	0	3	0	0	1	5
2013	3 ^a	0	11 ^a	0	0	0	14
2014	5	1	14 ^a	1	11 ^a	0	32 ^a
2015	10	1	11 ^a	0	0	0	22
2016	5	1	8 ^a	1	0	0	15 ^a
2017	4 ^a	0	19 ^a	3	2	0	28 ^a
2018	5	0	5 ^a	1	0	0	11 ^a
2019	6 ^a	0	1 ^a	0	0	0	7 ^a
Total	79^a	4	214^a	15	19^a	1	332^a

Source: see page 6, 'Australian Bat Lyssavirus Report'.

[^] 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.

^a For some bats, one equivocal and one negative result (FAT/PCR) was recorded. These bats are not included in these figures as they were not confirmed to be ABLV infected.

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

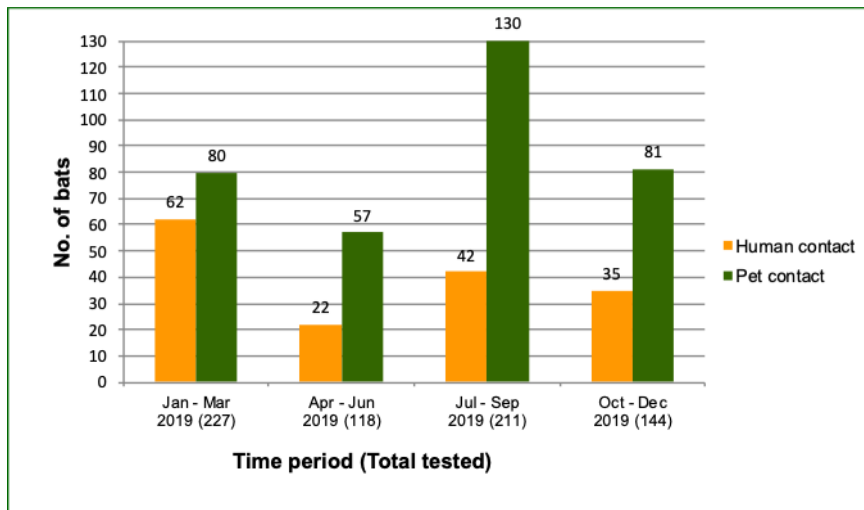


Figure 1 presents reported human-bat contacts which, based on Young & McCall 2010,¹ is an underestimate of the true contact frequency. Not all bat contact is reported, and for the majority of reports the bat is not available for testing. Some of the bats that had human contact also had contact with a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



Little broad-nosed bat
Photo: Michael Pennay / Flickr ([CC](#))

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.⁵ 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.

Black flying-fox Photo: James Niland / Flickr ([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 700 bats were tested for ABLV in Australia between January and December 2019 (Table 2).^{*} This includes 82 insectivorous bats submitted by bat carers as part of an ongoing surveillance project conducted by the Queensland Department of Agriculture and Fisheries. Seven cases of ABLV infection were reported in bats (1.0% 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.

Table 2: ABLV testing by bat species (Jan - Dec 2019)

Species	No. tested	No. ABLV infected
Flying-foxes, blossom & tube-nosed bats		
<i>Pteropus alecto</i> /Black flying-fox	204	1
<i>Pteropus poliocephalus</i> /Grey-headed flying-fox	191	2
<i>Pteropus scapulatus</i> /Little red flying-fox	40	2
<i>Pteropus conspicillatus</i> /Spectacled flying-fox	2	0
<i>Pteropus</i> sp.	106	2
<i>Nyctimene robinsoni</i> /Eastern tube-nosed bat	4	0
<i>Macroglossus minimus</i> /Northern blossom bat	2	0
Insectivorous bats (microbats)		
<i>Nyctophilus</i> sp.	21	0
<i>Scotorepens</i> sp.	13	0
<i>Nyctophilus geoffroyi</i> /Lesser long-eared bat	11	0
<i>Chalinolobus gouldii</i> /Gould's wattled bat	8	0
<i>Vespadelus</i> sp.	7	0
<i>Miniopterus orianae</i> /Large bent-wing bat	6	0
<i>Ozimops lumsdenae</i> /Northern free-tailed bat	6	0
<i>Miniopterus australis</i> /Little bent-wing bat	5	0
<i>Vespadelus vulturnus</i> /Little forest bat	5	0
<i>Macroderma gigas</i> /Ghost bat	4	0
<i>Nyctophilus arnhemensis</i> /Arnhem long-eared bat	4	0
<i>Nyctophilus gouldi</i> /Gould's long-eared bat	4	0
<i>Rhinolophus megaphyllus</i> /Eastern horseshoe bat	4	0
<i>Chalinolobus morio</i> /Chocolate wattled bat	2	0
<i>Hipposideros stenotis</i> /Northern leaf-nosed bat	2	0
<i>Nyctophilus walkeri</i> /Pygmy long-eared bat	2	0
<i>Ozimops ridei</i> /Ride's free-tailed bat	2	0
<i>Pipistrellus westralis</i> /Northern pipistrelle	2	0
<i>Scotorepens orion</i> /Eastern broad-nosed bat	2	0
<i>Vespadelus regulus</i> /Southern forest bat	2	0
<i>Vespertilionidae</i> sp.	2	0
<i>Rhinolophus ferrumequinum</i> /Greater horseshoe bat	1	0
<i>Scotorepens greyii</i> /Little broad-nosed bat	1	0
<i>Molossidae</i> sp.	1	0
<i>Ozimops</i> sp.	1	0
Microbat; species not identified	33	0
TOTAL	700	7

The number of bats submitted for ABLV testing was considerably higher than in previous periods, while the proportion of tested bats infected with ABLV was lower than previous, particularly in the second half of the year with only one case. The reason for this is not fully known, however could be related to ongoing flying-fox mortalities due to starvation, heat stress and bushfires (see News, p6), resulting in increased contact of sick and weak bats with pets and people.



Arnhem long-eared bat Photo: GB Baker © Australian Museum

^{*} 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.

Table 3: ABLV infection (%) in bats submitted for testing (Jan-Dec 2019)

	No. tested	No. infected [*]	% infected [*]
Flying-foxes, blossom & tube-nosed bats	549	7	1.3%
Microbats	151	0	0%
TOTAL	700	7	1.0%

^{*} 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.

⁺ In twelve bats there was an equivocal FAT or PCR result. These bats are not included in these figures as they were not confirmed to be ABLV infected.

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.**
- ✿ **If you suspect a bat is infected** with ABLV contact your biosecurity authority (department of agriculture or primary industries) for advice about testing.
- ✿ **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**



Grey-headed flying-foxes Photo: Russell Charters / Flickr ([CC](#))

Recent news and publications

Australian bat lyssavirus (ABLV) in Q3 [NSW]

NSW DPI Animal Health Surveillance 2019/3: "Over 2019, NSW DPI has seen an increase in the number of bats submitted for Australian Bat Lyssavirus (ABLV) testing compared to recent years... Between 2015-2018, the average number of bats tested in the third quarter... was 16.5 bats, and in 2019, 55 bats were tested... No tested bat has been positive for ABLV in the third quarter.... Increased submissions in 2019 are likely related to heat or drought, resulting in increased bat contacts..."

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/1190718/animal-health-surveillance-2019-3.pdf (see p10)

Australian bat lyssavirus - two decades on

Cox-Witton K (2019). *Australian Veterinary Journal News*: "Australian bat lyssavirus..., a virus related to rabies, was first recognised in flying-foxes in 1996. Two decades of research and surveillance have helped us to better understand this disease..."

Flying foxes found dead and emaciated across eastern Australia as dry weather bites

17/10/2019 The Guardian: "Flying foxes, including threatened species, have been dying or taken into care in large numbers due to a food shortage in their habitat in eastern Australia. Authorities in Queensland and New South Wales say there have been increased reports since September of sick and dead flying-foxes in an area stretching from northern NSW up to Gladstone in Queensland. Many of the animals found on the ground have been highly emaciated and dehydrated..."

<https://www.theguardian.com/environment/2019/oct/17/flying-foxes-found-dead-and-emaciated-across-eastern-australia-as-dry-weather-bites>

Wildlife Health Australia report: Mortality event in grey-headed and black flying-foxes in NSW & Qld

<https://www.wildlifehealthaustralia.com.au/DiseaseIncidents/OngoingIncidents.aspx>

Related media releases:

23/09/2019 Queensland Health & Biosecurity Queensland: Health warning as starving bats fall to ground

<https://www.health.qld.gov.au/news-events/doh-media-releases/releases/health-warning-as-starving-bats-fall-to-ground>

17/12/2019 NSW Health: If a bat needs rescuing, call the experts

https://www.health.nsw.gov.au/news/Pages/20191217_00.aspx

Mass baby bat deaths threatening the future of forests as effects of drought and bushfires mount

14/12/2019 ABC Illawarra: "Baby bats are being left for dead by their mothers in their thousands on the New South Wales coast in an 'abandonment event' as drought and bushfire remove crucial vegetation for the keystone species... Ms Davies said the babies are being abandoned because there is simply not enough food for the mothers to sustain their offspring..."

<https://www.abc.net.au/news/2019-12-14/mass-baby-bat-deaths-from-drought-and-bushfire/11793826>

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 ABLV and Zoonoses (*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: <http://www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home>

AUSVETPLAN

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

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 Animal Health Laboratory, 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

Australian Bat Lyssavirus Report

This report presents the latest information on Australian bat lyssavirus (ABLV) testing across Australia. Information has been made available by CSIRO Australian Animal Health Laboratory, Janine Barrett PhD thesis 2004 (with permission), QLD Health, zoo & wildlife veterinarians, 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 Animal Health Australia (2009). Disease strategy: Australian bat lyssavirus (Version 3.0). Australian Veterinary Emergency Plan (AUSVETPLAN), Edition 3, Primary Industries Ministerial Council, Canberra, ACT

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@dpipwe.tas.gov.au
VIC	Mark Hawes	(03) 9032 7275	mark.hawes@ecodev.vic.gov.au
WA	Emily Glass	(08) 9368 3360	Emily.Glass@dpird.wa.gov.au



Wildlife Health Australia

Suite E, 34 Suakin Drive, Mosman NSW 2088

Phone: (02) 9960 6333 Fax: (02) 9960 3386

email: admin@wildlifehealthaustralia.com.au

www.wildlifehealthaustralia.com.au