

NSW Arbovirus Surveillance & Mosquito Monitoring 2020-2021

Weekly Update: Week ending 6 February 2021

(Report Number 13)



Summary

Arbovirus Detections

- **Sentinel Chickens:** There were no arbovirus detections in sentinel chickens.
- **Mosquito Isolates:** There were no Ross River virus or Barmah Forest virus detections in mosquito isolates.

Mosquito Abundance

- **Inland:** HIGH at Forbes. LOW at Bourke, Leeton, Wagga Wagga and Albury.
- **Coast:** HIGH at Ballina, Tweed and Gosford. MEDIUM at Kempsey and Narooma. LOW at Casino, Mullumbimby, Byron, Coffs Harbour, Bellingen, Port Macquarie and Wyong.
- **Sydney:** HIGH at Penrith, Parramatta and Northern Beaches. MEDIUM at Hawkesbury, Bankstown, Georges River, Liverpool City and Sydney Olympic Park. LOW at Hills Shire, Blacktown and Canada Bay.

Environmental Conditions

- **Climate:** In the past week, there was moderate rainfall across most of NSW, with little to no rainfall in the far west and lower rainfall than usual in the northeast. Rainfall is predicted to be about usual across most of NSW in February, with higher rainfall than usual in southeastern NSW particularly in the regions including and surrounding Sydney and Canberra. Lower rainfall is expected in parts of northwest NSW bordering Queensland and South Australia. Temperatures in February are likely to be usual but above usual in the northeast along the Queensland border.
- **Tides:** High tides over 1.8 metres are predicted to occur between 9-13 February, 26 February - 2 March and 27-31 March which could trigger hatching of *Aedes vigilax*.

Human Arboviral Disease Notifications

- **Ross River Virus:** 16 cases were notified in the week ending 23 January 2021.
- **Barmah Forest Virus:** 1 case was notified in the week ending 23 January 2021.

Weekly reports are available at:

www.health.nsw.gov.au/environment/pests/vector/Pages/surveillance.aspx

Please send questions or comments about this report to:

Surveillance and Risk Unit, Environmental Health Branch, Health Protection NSW:
hssg-ehbsurveillance@health.nsw.gov.au

Testing and scientific services were provided by the Department of Medical Entomology, NSW Health Pathology (ICPMR) for mosquito surveillance, and the Arbovirus Emerging Diseases Unit, NSW Health Pathology (ICPMR) for sentinel chicken surveillance.

The arbovirus surveillance and mosquito monitoring results in this report remain the property of the NSW Ministry of Health and may not be used or disseminated to unauthorised persons or organisations without permission.

SHPN (HP NSW) 200547

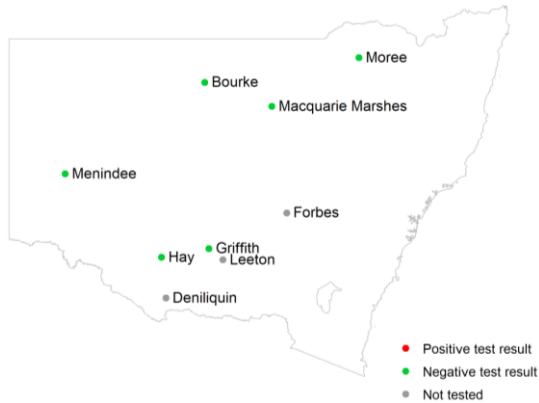
Arbovirus Detections

This section details detections of Murray Valley encephalitis virus, Kunjin virus, Ross River virus and Barmah Forest virus in the NSW Arbovirus Surveillance and Mosquito Monitoring Program.

Sentinel chickens

Chickens are bled for detection of antibodies directed against Murray Valley encephalitis virus and Kunjin virus, indicating exposure to these viruses. A test result is shown if it has been reported in the last two weeks.

Test results for sentinel chickens in the week ending 6 February 2021



Positive test results in the 2020-2021 surveillance season

Date of sample collection	Location	Positive test results
There have been no detections in sentinel chickens in the 2020-2021 surveillance season		

Mosquito isolates

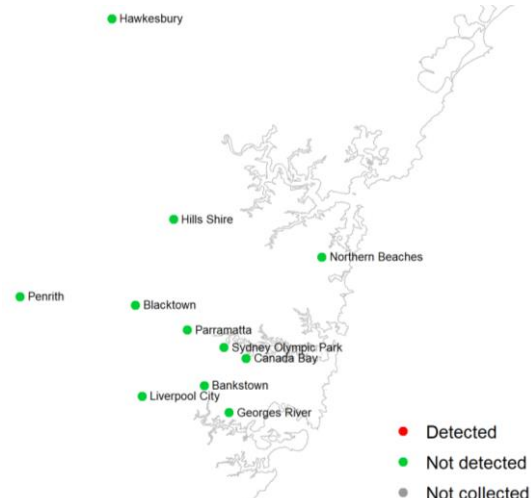
Whole grinds of mosquitoes are tested for arbovirus nucleic acids (including Ross River virus and Barmah Forest virus). There were no detections of Ross River virus or Barmah Forest virus among sites that collected mosquitoes in this reporting week.

Test results for mosquito trapping sites in the week ending 6 February 2021

Inland and Coastal sites



Sydney sites



Ross River and Barmah Forest viruses detected in the past three weeks

Date of sample collection	Location	Virus
19 January 2021	Hanwood, Griffith	Ross River virus

Mosquito Abundance

This section details counts of mosquitoes in the NSW Arbovirus Surveillance and Mosquito Monitoring Program. Each location represents the count average for all trapping sites at that location for specimens collected in the current reporting week.

Culex annulirostris and *Aedes vigilax* are vectors of interest for Ross River virus and Barmah Forest virus.

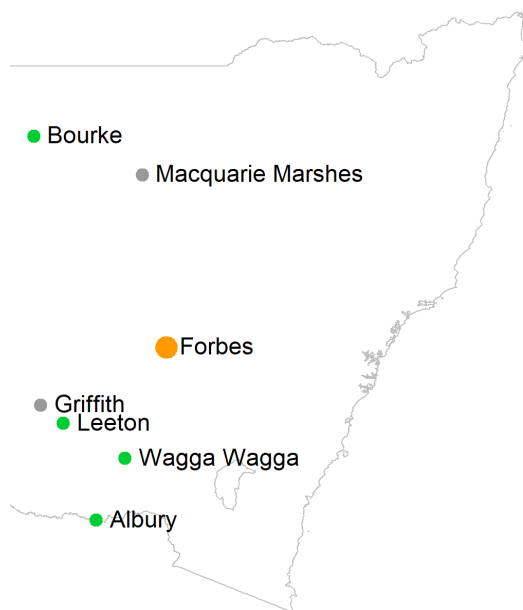
Mosquito counts in the week ending 6 February 2021

Key:

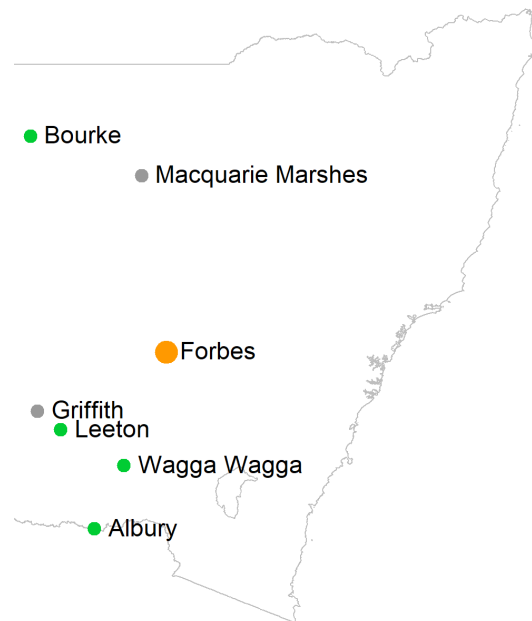
- No collection
- Low (<50)
- Medium (50-100)
- High (101-1,000)
- Very high (1,001-10,000)
- Extreme (>10,000)

Inland sites

Total mosquito counts

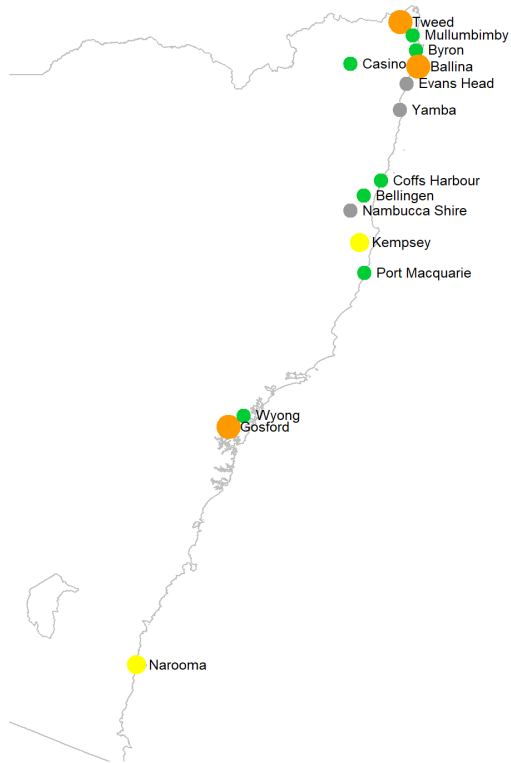


Culex annulirostris counts



Coastal sites

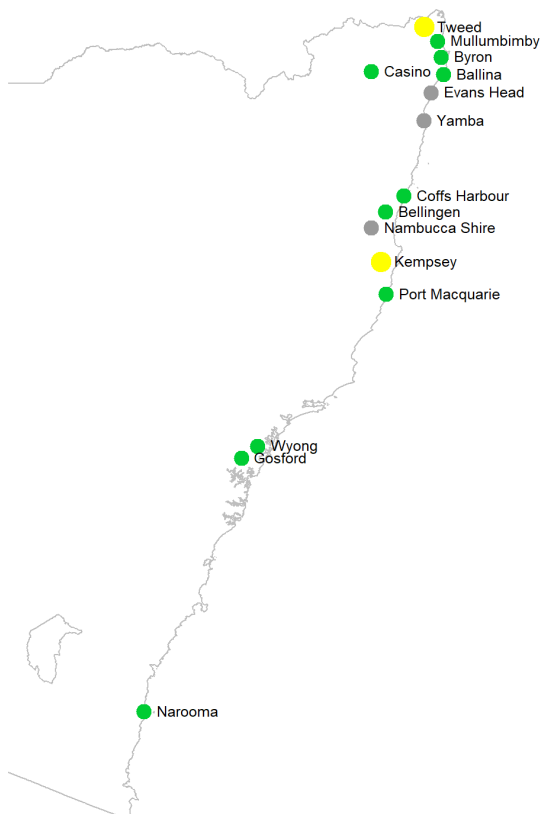
Total mosquito counts



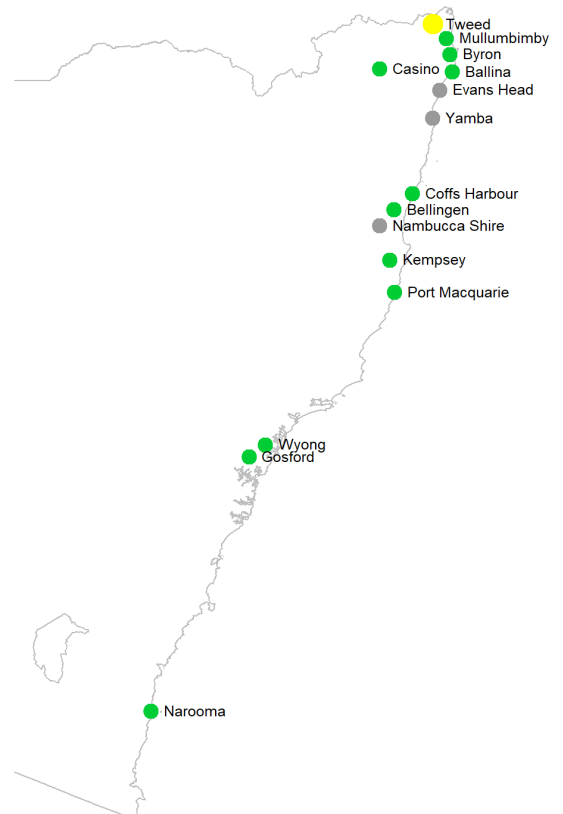
Key:

- No collection
- Low (<50)
- Medium (50-100)
- High (101-1,000)
- Very high (1,001-10,000)
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Culex annulirostris counts

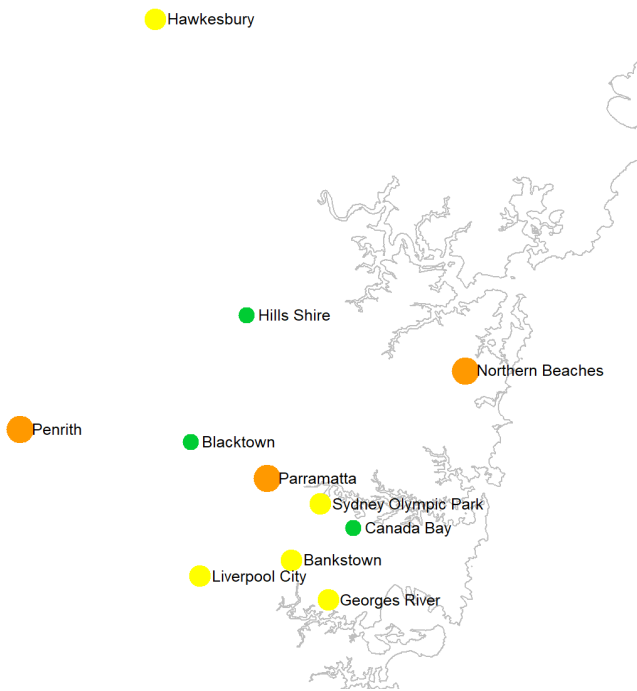


Aedes vigilax counts



Sydney sites

Total mosquito counts



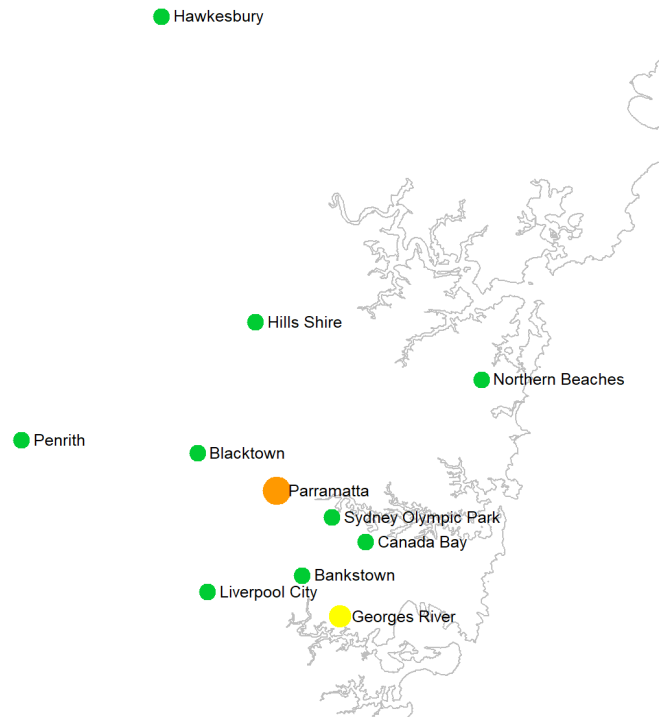
Key:

- No collection
- Low (<50)
- Medium (50-100)
- High (101-1,000)
- Very high (1,001-10,000)
- Extreme (>10,000)

Culex annulirostris counts



Aedes vigilax counts



Mosquito abundance data for 2020-21 season to date

Key:

No collection
Low (<50)
Medium (50-100)
High (101-1,000)
Very high (1,001-10,000)
Extreme (>10,000)

Data in the below tables represent the average for all trapping sites at that location. “*Cx. annul*” refers to *Culex annulirostris* and “*Ae.vigilax*” refers to *Aedes vigilax*.

Inland

Location		WEEK ENDING																			
		Nov-20				Dec-20			Jan-21				Feb-21				Mar-21				
		7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20
Albury	<i>Cx. annul</i>																				
	Total																				
Bourke	<i>Cx. annul</i>																				
	Total																				
Forbes	<i>Cx. annul</i>																				
	Total																				
Griffith	<i>Cx. annul</i>																				
	Total																				
Leeton	<i>Cx. annul</i>																				
	Total																				
Macquarie Marshes	<i>Cx. annul</i>																				
	Total																				
Wagga Wagga	<i>Cx. annul</i>																				
	Total																				

Coastal

		WEEK ENDING																					
		Nov-20				Dec-20				Jan-21				Feb-21				Mar-21					
Location	Mosquito	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27	
Ballina	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Bellingen	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Byron	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Coffs Harbour	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Gosford	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Kempsey	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Mullumbimby	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Port Macquarie	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Tweed	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Wyong	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Yamba	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Narooma	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						
Casino	<i>Cx. annul</i>																						
	<i>Ae. vigilax</i>																						
	Total																						

Sydney

		WEEK ENDING																				
		Nov-20				Dec-20				Jan-21				Feb-21				Mar-21				
Location	Mosquito	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27
Bankstown	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Blacktown	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Canada Bay	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Georges River	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Hawkesbury	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Hills Shire	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Liverpool City	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Northern Beaches	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Parramatta	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Penrith	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					
Sydney Olympic Park	<i>Cx. annul</i>																					
	<i>Ae. vigilax</i>																					
	Total																					

Environmental Conditions

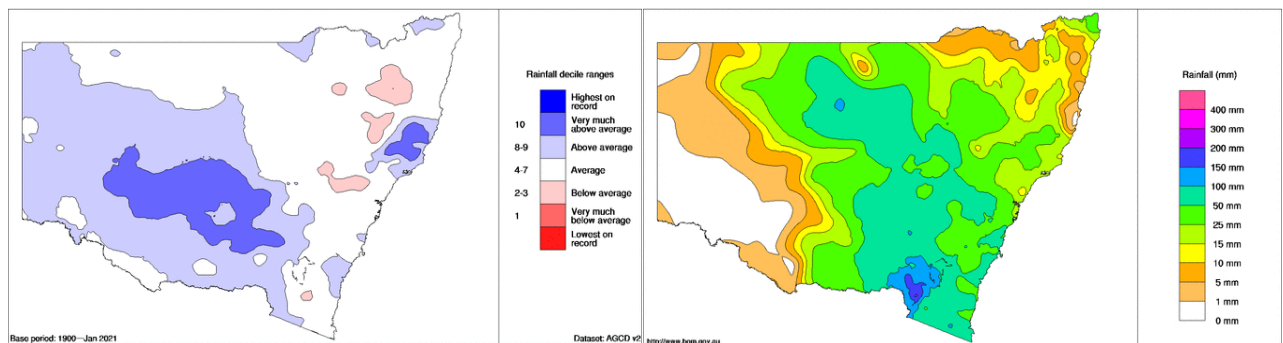
Mosquitoes require water to breed. Rainfall and tides (for the salt marsh mosquito) are important contributing factors for proliferation of mosquito numbers. Unseasonably warm weather can also contribute to higher mosquito numbers.

Rainfall

In January, rainfall was higher than usual across most of central and far west NSW, in areas along the south coast near Bega and Batemans Bay, and in areas along the mid north coast. Rainfall was usual for the rest of NSW but below average in some areas inland in the northeast (left). In the week ending 6 February 2021, there was moderate rainfall across most of NSW, with no to little rainfall in the far west and lower rainfall than usual in the northeast (right).

Source: Australian Government, Bureau of Meteorology: <http://www.bom.gov.au/climate/maps/rainfall>

Next month's rainfall and temperature outlook



The Bureau of Meteorology's rainfall outlook map predicts about usual rainfall across most of NSW in February, with higher rainfall than usual predicted in southeastern NSW, particularly in the regions including and surrounding Sydney and Canberra. Lower rainfall is expected in parts of northwest NSW bordering Queensland and South Australia.

www.bom.gov.au/climate/outlooks/#/rainfall/median/monthly/0

The Bureau of Meteorology's temperature outlook maps predicts that maximum temperatures are likely to be about usual for most of NSW in February, but above usual in the northeast along the Queensland border. Minimum temperatures are likely to be usual across NSW but higher than usual along the coast and inland on the eastern fringe.

www.bom.gov.au/climate/outlooks/#/temperature/maximum/median/monthly/0

www.bom.gov.au/climate/outlooks/#/temperature/minimum/median/monthly/0

Tides

Tidal information is relevant for the prediction of the activity of the salt marsh mosquito, *Aedes vigilax*. Typically for NSW, high tides of over 1.8 m, as measured at Sydney, can induce hatching of *Aedes vigilax* larvae. Predicted tide heights can provide some indication of when this is likely to occur.

Dates of predicted high tides of over 1.8 m at Sydney (Fort Denison) for the next month

- 9-13 February 2021
- 26 February - 2 March 2021
- 27-31 March 2021

Source: Australian Government, Bureau of Meteorology: <http://www.bom.gov.au/australia/tides/#/nsw-sydney-fort-denison>

Note: Measured tides at Sydney Port Jackson for the current week are available from the NSW Government, Manly Hydraulics Laboratory: <https://mhl.nsw.gov.au/Data-OceanTide>.

Human Arboviral Disease Notifications

Under the *NSW Public Health Act 2010*, all arboviral infections are notifiable in NSW. The NSW Health Communicable Diseases Weekly Report (CDWR) (www.health.nsw.gov.au/Infectious/reports/Pages/CDWR.aspx) details cases by the week that they are received by NSW Public Health Units.

The data for Ross River virus and Barmah Forest virus from the CDWR for the latest reported 3 weeks are in the following table.

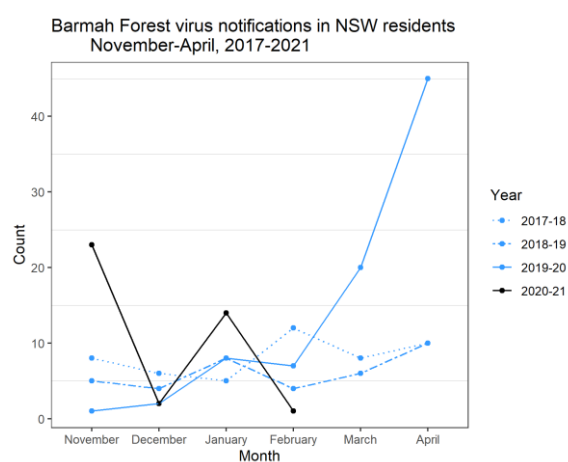
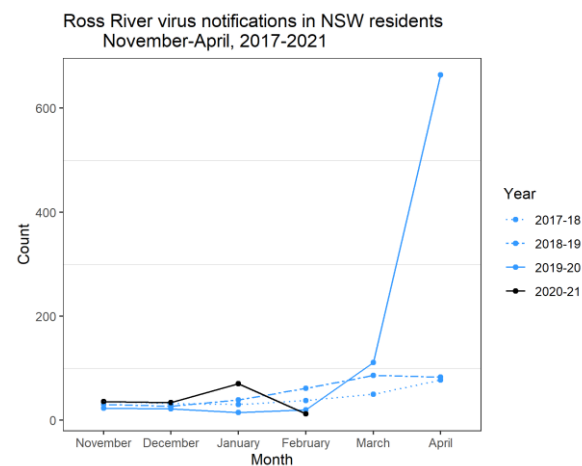
Recent notifications of Ross River virus and Barmah Forest virus in humans (by date of case report received)

	Week		
	Latest week (17-23 Jan 2021)	1-week prior (10-16 Jan 2021)	2-weeks prior (3-9 Jan 2021)
Ross River virus	16	20	20
Barmah Forest virus	1	3	4

Source: CDWR, Communicable Diseases Branch, Health Protection NSW, NSW Health
Notifications are for NSW residents - infection may have been acquired outside NSW.

Monthly Ross River virus and Barmah Forest virus notifications, by month of disease onset (the earlier of patient-reported onset, specimen, or notification date), are available at the following NSW Health website: <https://www1.health.nsw.gov.au/IDD/pages/data.aspx>

The following figures show the monthly number of notifications of Ross River virus and Barmah Forest virus for the current NSW Arbovirus and Mosquito Monitoring season (November 2020 to April 2021), and the same period in the previous three years.



Source: NSW Health Notifiable Conditions Information Management System (NCIMS), Communicable Diseases Branch and Centre for Epidemiology and Evidence, NSW Health

Note: The data for the current month are the notifications to date (data extracted on 8 February 2021).