

NSW Arbovirus Surveillance & Mosquito Monitoring 2020-2021

Weekly Update: Week ending 21 November 2020

(Report Number 3)



Summary

Arbovirus Detections

- **Sentinel Chickens:** Data are not yet available. Sentinel chicken surveillance is to begin in early December 2020.
- **Mosquito Isolates:** There were no arbovirus detections in mosquito isolates.

Mosquito Abundance

- **Inland:** HIGH at Griffith. MEDIUM at Albury. LOW at Wagga Wagga.
- **Coast:** Data are not yet available. Mosquito trapping at coastal sites will begin the first week of December 2020.
- **Sydney:** Data are not yet available. Mosquito trapping at Sydney sites will begin the first week of December 2020.

Environmental Conditions

- **Climate:** In the past week, there was no or low rainfall across almost all of NSW. Usual rainfall and higher than usual temperatures are expected across most of NSW for the remainder of November, with higher rainfall and higher than usual temperatures predicted for most areas of NSW in December.
- **Tides:** High tides over 1.8 metres are predicted to occur from 13-18 December, which could trigger hatching of *Aedes vigilax*.

Human Arboviral Disease Notifications

- **Ross River Virus:** 7 cases were notified in the week ending 14 November 2020.
- **Barmah Forest Virus:** 8 cases were notified in the week ending 14 November 2020.

Comments and other findings of note

The weekly report will now present results by week ending on a Saturday.

As the program is experiencing delays in courier specimen deliveries to the laboratory, mosquito abundance data will be presented chronologically for each reporting week in table format. Geographical maps displaying mosquito abundance by site will continue to be used; however, the maps will now only display specimens collected in the current reporting week.

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

Cover photos: **Bottom left** - Common banded mosquito, *Culex annulirostris*
Top and bottom right - Saltmarsh mosquito, *Aedes vigilax*
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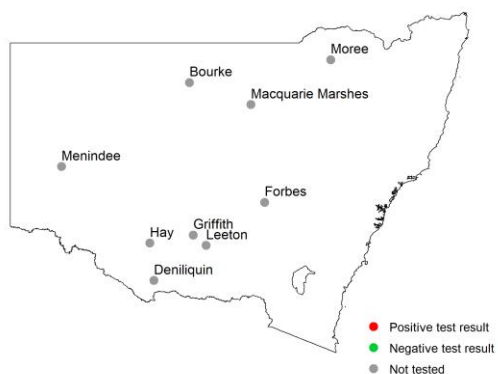
Arbovirus Detections

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. Data are not available in this reporting week as sentinel chicken surveillance is to begin in early December 2020.

Chicken surveillance sites, 2020-2021 season



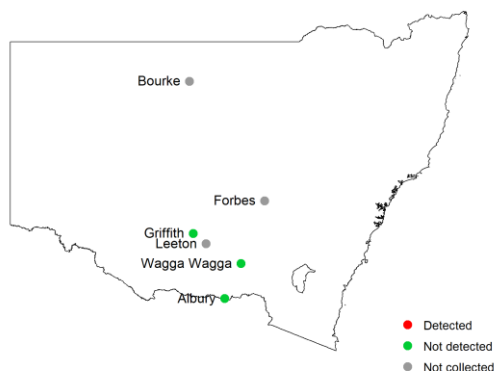
Positive test results in the 2021-2021 surveillance season

Date of sample collection	Location	Positive test results
Chicken surveillance will begin in December 2020.		

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 and Barmah Forest virus among inland sites that had collected mosquitos in this reporting week. Mosquito trapping will begin in coastal and Sydney sites in early December 2020.

Test results for inland mosquito trapping sites in the week ending 21 November 2020



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

Date of sample collection	Location	Virus
There have been no detections in the 2020-2021 surveillance season		

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. Data are only available for inland sites in this reporting week as coastal and Sydney mosquito trapping will begin in early December 2020.

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

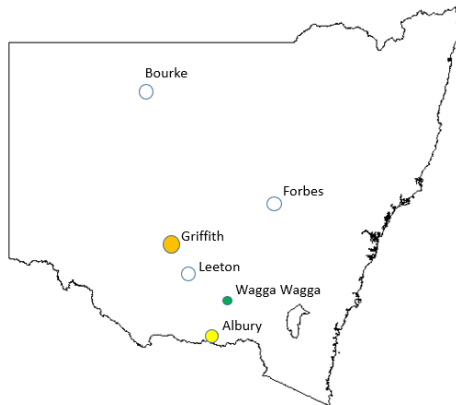
Mosquito counts in the week ending 21 November 2020

Key:

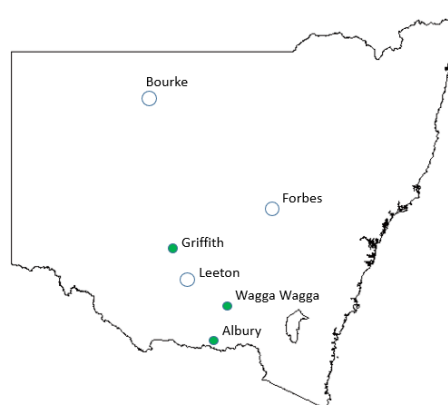
- No collection
- Low (<50)
- Medium (50-100)
- High (101-1,000)
- Very high(1,001-10,000)
- Extreme (>10,000)

Inland sites

Total mosquito counts



Culex annulirostris counts



Mosquito abundance data for 2020-21 season to date

Inland

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

		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	
Albury	<i>Cx. annul</i>	Low	Low	Low																			
	Total	Low	Low	Medium																			
Bourke	<i>Cx. annul</i>																						
	Total																						
Forbes	<i>Cx. annul</i>	Low																					
	Total	High																					
Griffith	<i>Cx. annul</i>		Medium	Low																			
	Total		High	High																			
Leeton	<i>Cx. annul</i>	Low	Low																				
	Total	Low	Low																				
Wagga Wagga	<i>Cx. annul</i>	Low	Low	Low																			
	Total	Low	Low	Low																			

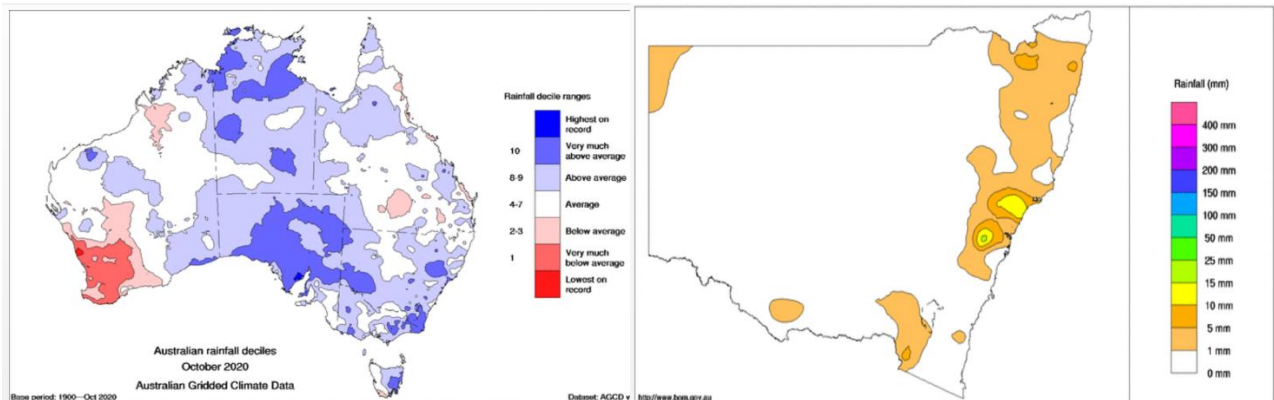
Data in the table represents average for all trapping sites at that location. "Cx. annul" refers to *Culex annulirostris*.

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 October, rainfall was above average in most of inland NSW and along most of the coast. Areas along the South Australian border, south coast (near the ACT) and central coast experienced very much above average rainfall (left). In the week ending 21 November 2020, there was no or low rainfall across almost all of NSW (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 around usual rainfall levels across most of NSW for the remainder of November, with more rainfall than usual predicted throughout NSW in December. www.bom.gov.au/climate/outlooks/#/rainfall/median/monthly/0

The Bureau of Meteorology's temperature outlook maps predict that maximum temperatures are likely to be higher than usual across most of NSW for the remainder of November and in to early December, with maximum temperatures around usual in the central coastal region, including Sydney, during this time. Minimum temperatures are predicted to be higher than usual across most areas of NSW.

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

- 13-18 December 2020.

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

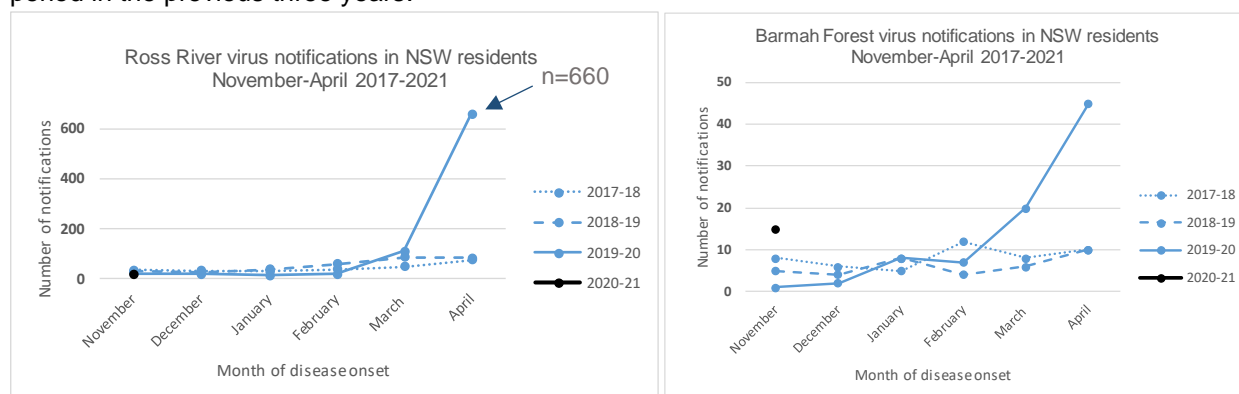
(by date of case report received)

	Week		
	Latest week (8-14 Nov 2020)	1-week prior (1-7 Nov 2020)	2-weeks prior (25-31 Oct 2020)
Ross River virus	7	12	5
Barmah Forest virus	8	7	0

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 23 November 2020).