NSW Arbovirus Surveillance & Mosquito Monitoring 2021-2022

Weekly Update: Week ending 22 January 2022

(Report Number 11)

NSW GOVERNMENT

Summary

Arbovirus Detections

- **Sentinel Chickens:** There were no arbovirus detections in sentinel chickens.
- **Mosquito Isolates:** There were no arbovirus detections in mosquito isolates.

Mosquito Abundance

- **Inland:** LOW at Bourke, HIGH at Albury, Leeton, and Wagga Wagga, VERY HIGH at Forbes and Griffith.
- **Coast:** LOW at Port Macquarie, Lake Cathie and Tweed, MEDIUM at Kempsey, Gosford and Wyong, HIGH at Ballina.
- **Sydney:** LOW at Sydney, HIGH at Northern Beaches, Bankstown, Hawkesbury, Blacktown, Liverpool City, Paramatta, Penrith and Sydney Olympic Park.

Environmental Conditions

Climate: In the week ending 22 January 2022, there was , low rainfall across most of Far West NSW, and moderate rainfall across Eastern NSW.Higher rainfall is expected for coastal regions of NSW for February 2022. Higher than usual minimum temperatures are expected across NSW in February and maximum temperatures are likely to exceed average in western NSW**.**

- **Tides:** High tides over 1.8 metres predicted 19-20 January, and 30 January – 4 February 2022 which could trigger hatching of *Aedes vigilax.*

Human Arboviral Disease Notifications

- **Ross River Virus:** 16 cases were notified in the week ending 15 January 2022.
- **Barmah Forest Virus:** 0 cases were notified in the week ending 15 January 2022.

Comments and other findings of note

There is a heightened and on-going risk of riverine flooding and dangerous flash flooding this summer. Kunjin virus was detected in horses in Murrumbidgee and Hunter New England area and the potential for transmission to humans exists. In light of these detections, people should take appropriate measures to avoid mosquito bites.

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.

SPHN (HP NSW) 211005

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

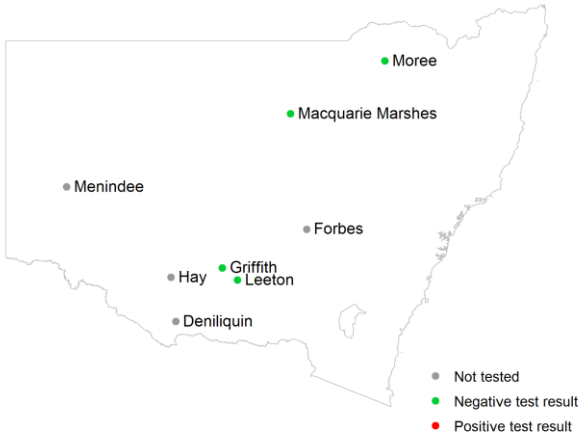
Arbovirus Detections

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.

Chicken surveillance sites, 2021-2022 season



Positive test results in the 2021-2022 surveillance season

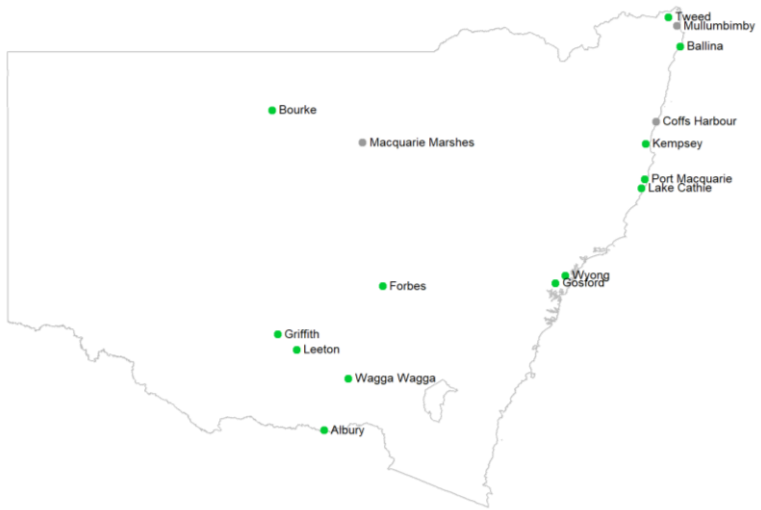
Date of sample collection	Location	Virus
There have been no detections in sentinel chickens in the 2021-2022 surveillance season		

Mosquito isolates

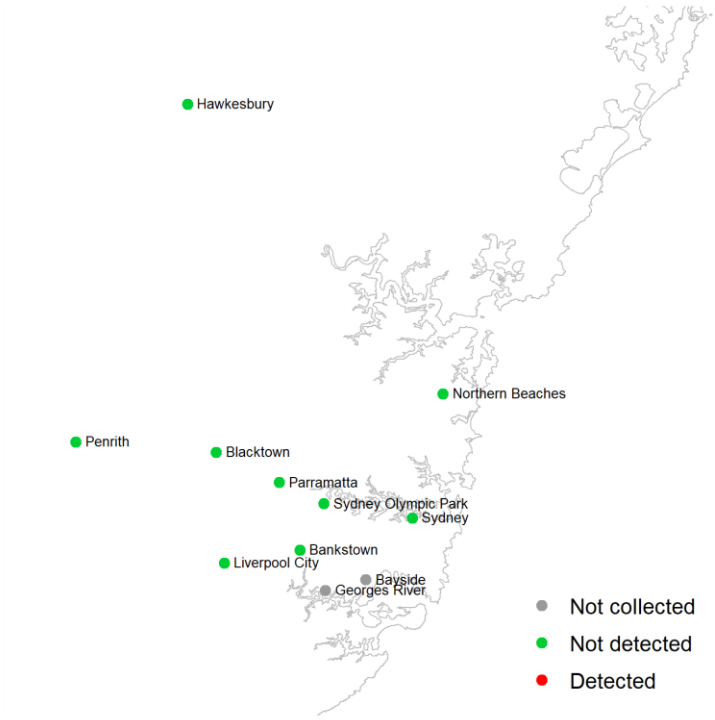
Whole grinds of mosquitoes are tested for arbovirus nucleic acids (including Ross River virus and Barmah Forest virus). There were no detections of Barmah Forest virus among sites that had collected mosquitos in this reporting week. Ross River virus was detected in mosquitoes collected in Penrith and in Forbes (details below).

Test results for mosquito trapping sites in the latest week to 22 January 2022 (by date of report)

Inland and Coastal sites



Sydney Sites



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

Date of sample collection	Location	Virus
11/01/2022	Penrith	Ross River virus
10/01/2022	Forbes	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 the most recent week that collections were provided prior to preparation of this report.

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

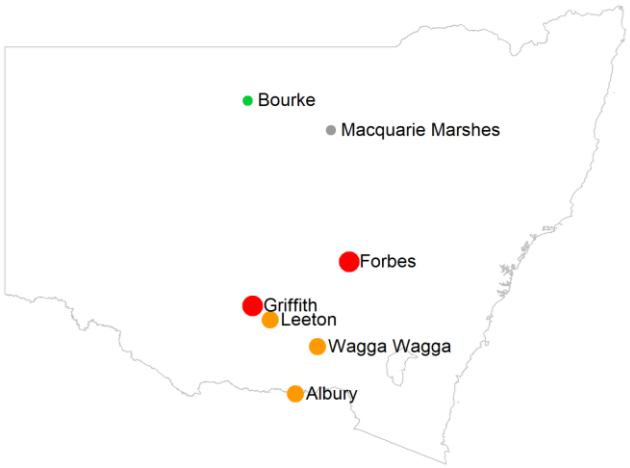
Mosquito counts (Average per trap per location) in the latest week to 22 January 2022 (by date of report)

Key:

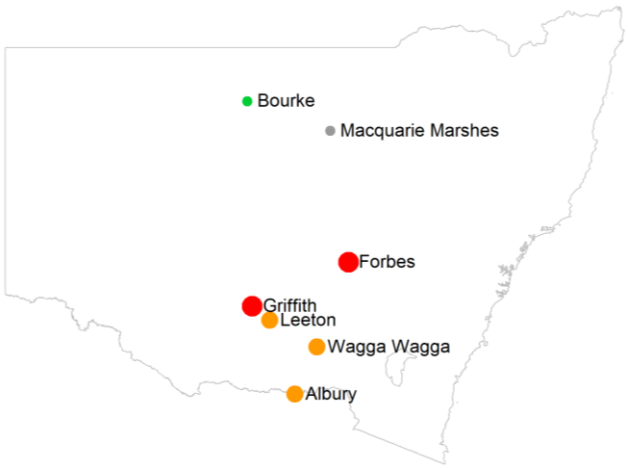
- No collection
- Low (<50)
- Medium (50-100)
- High (101-1,000)
- Very high (1,001-10,000)
- Extreme (>10,000)

Inland sites

Total mosquito counts

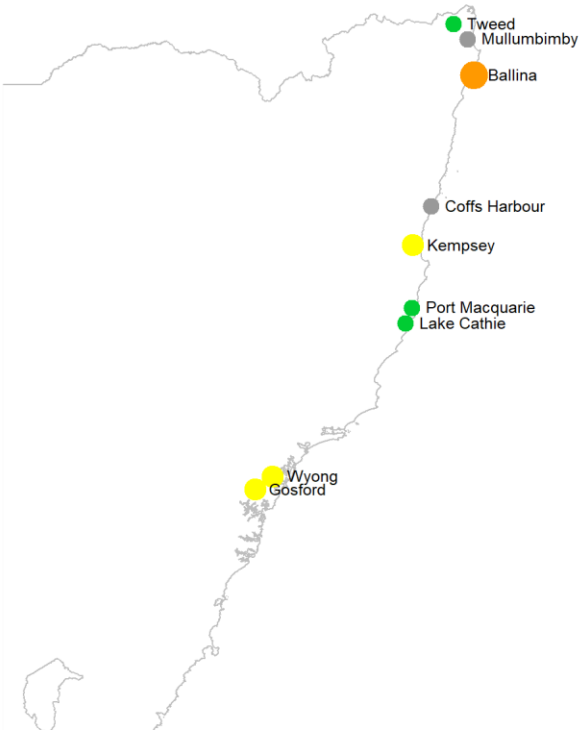


***Culex annulirostris* counts**



Coastal sites

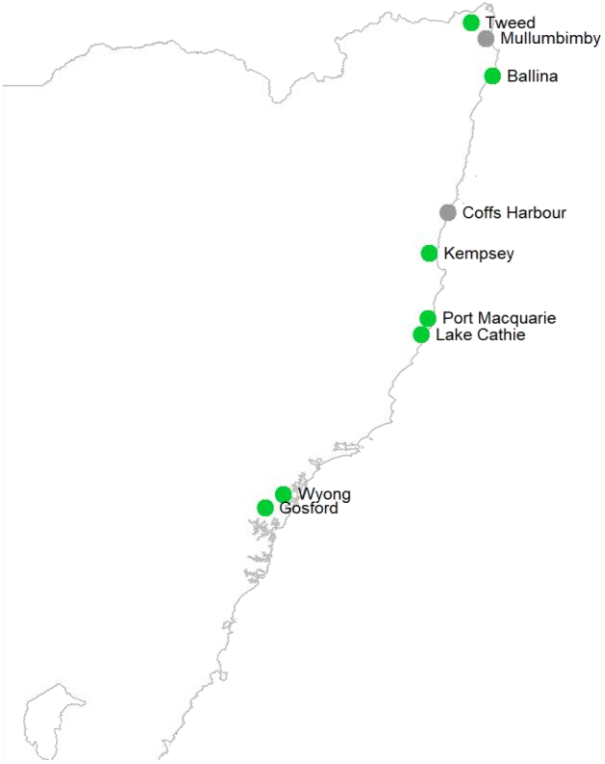
Total mosquito counts



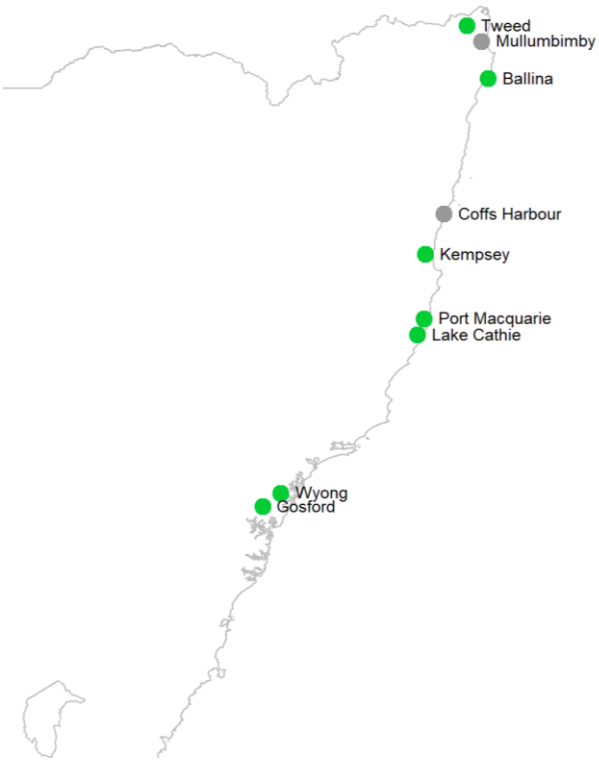
Key:

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

Culex annulirostris counts

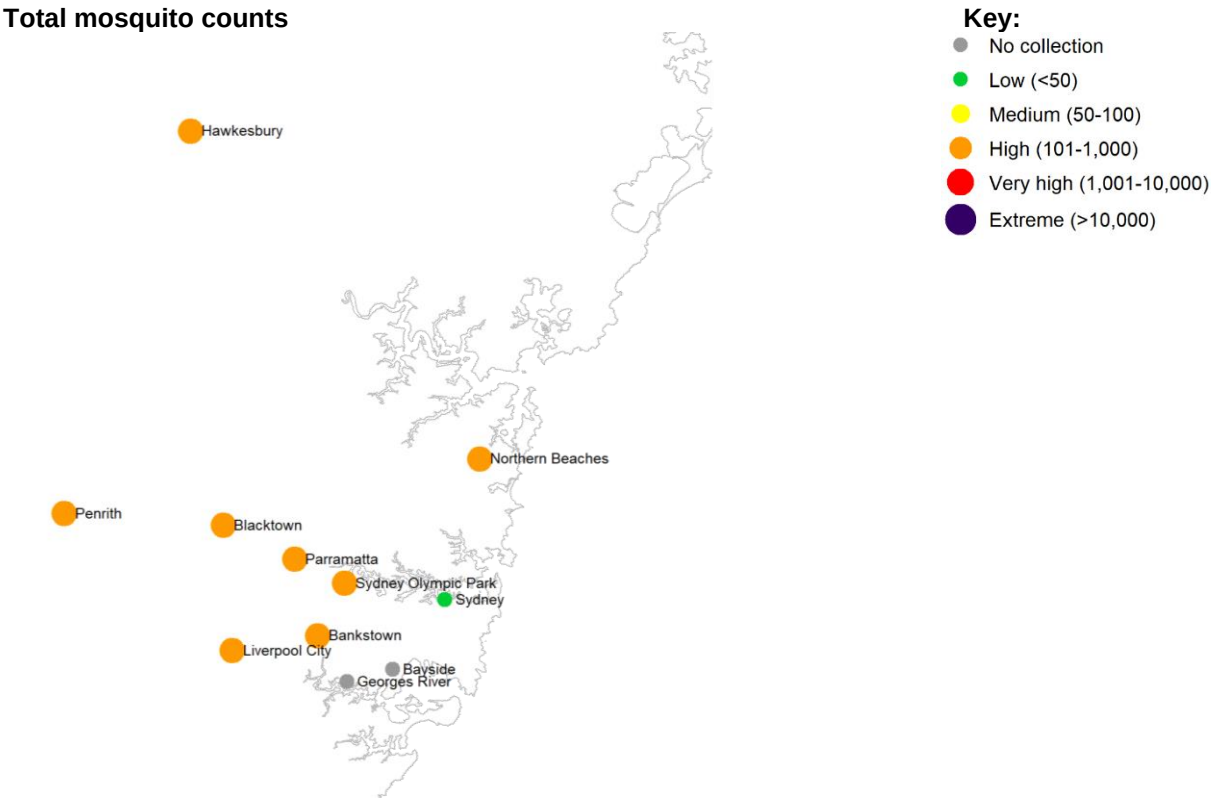


Aedes vigilax counts



Sydney sites

Total mosquito counts

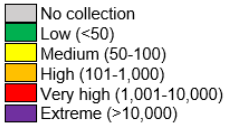


Culex annulirostris counts

Aedes vigilax counts

Mosquito abundance data for 2021-22 season to date

Key:



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

Inland

		WEEK ENDING																													
		Nov-21				Dec-21				Jan-22					Feb-22				Mar-22				Apr-22					May-22			
Location	Mosquito	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	20	7	14	21	28
Albury	*Cx. annul*																														
	Total																														
Bourke	*Cx. annul*																														
	Total																														
Forbes	*Cx. annul*																														
	Total																														
Griffith	*Cx. annul*																														
	Total																														
Leeton	*Cx. annul*																														
	Total																														
Macquarie Marshes	*Cx. annul*																														
	Total																														
Wagga Wagga	*Cx. annul*																														
	Total																														

Coastal

		WEEK ENDING																												
		Nov-21				Dec-21				Jan-22					Feb-22				Mar-22				Apr-22					May-22			
Location	Mosquito	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	20	7	14	21	28
Ballina	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Coffs Harbour	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Gosford	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Kempsey	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Lake Cathie	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Mullumbimby	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Port Macquarie	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Tweed	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Wyong	*Cx. annul*																													
	Ae. vigilax																													
	Total																													

Sydney

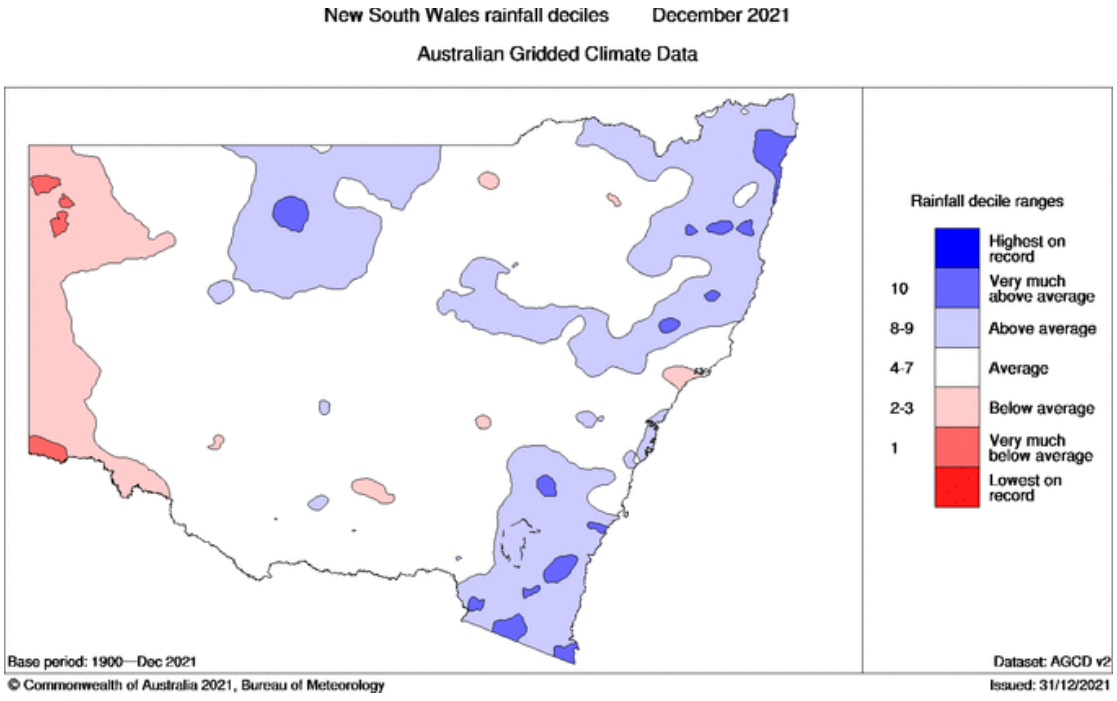
		WEEK ENDING																												
		Nov-21				Dec-21				Jan-22					Feb-22				Mar-22				Apr-22					May-22			
Location	Mosquito	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	20	7	14	21	28
Bankstown	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Blacktown	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Georges River	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Hawkesbury	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Liverpool City	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Bayside	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Northern Beaches	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Parramatta	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Penrith	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Sydney Olympic Park	*Cx. annul*																													
	Ae. vigilax																													
	Total																													
Sydney	*Cx. annul*																													
	Ae. vigilax																													
	Total																													

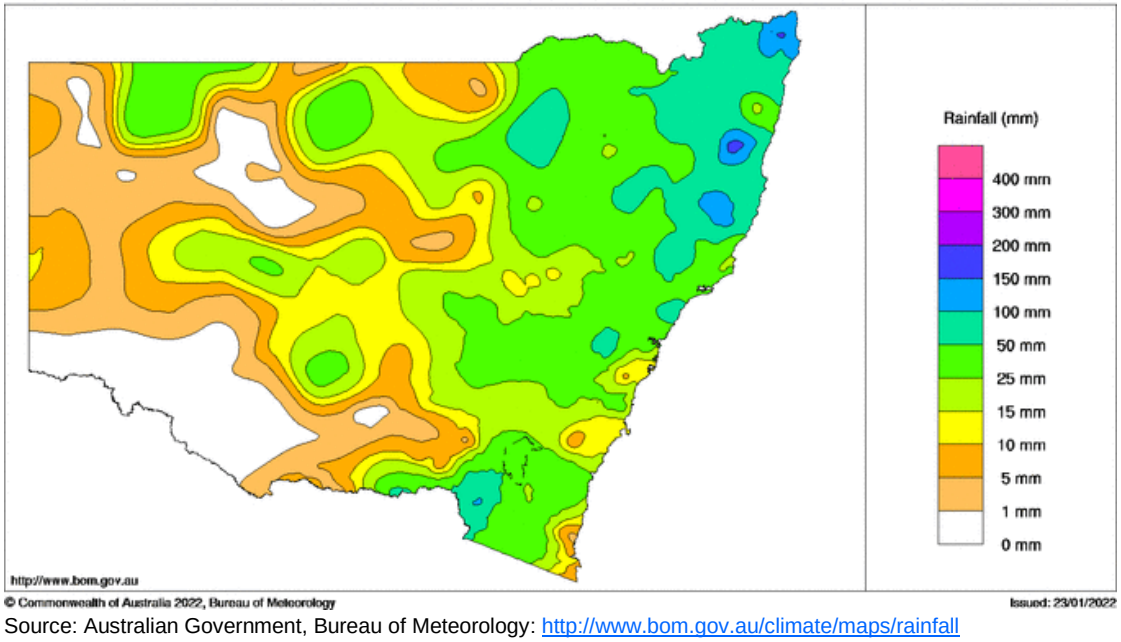
Environmental Conditions

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 December, rainfall was near average across most of NSW, with slightly above average totals in the east and slightly below average in the far west. In the week ending 22 January 2022, there was low rainfall across most of Far West NSW, and moderate rainfall across Eastern NSW.





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 that coastal regions of NSW are likely to receive more rainfall than usual for February.
www.bom.gov.au/climate/outlooks/#/rainfall/median/monthly/0

The Bureau of Meteorology's temperature outlook maps predict that minimum temperatures are likely to be higher than usual across NSW in February. Maximum temperatures are likely to exceed the average maximum temperature in western NSW and be near average elsewhere.
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 January and the coming month

- 19-20 January 2022
- 30 January – 4 February 2022

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*, human arboviral infections are notifiable in NSW. The NSW Health Communicable Diseases Weekly Report (CDWR) reports confirmed and probable case numbers by the week they are received by the NSW notifiable diseases surveillance system, and is available at: www.health.nsw.gov.au/Infectious/reports/Pages/CDWR.aspx.

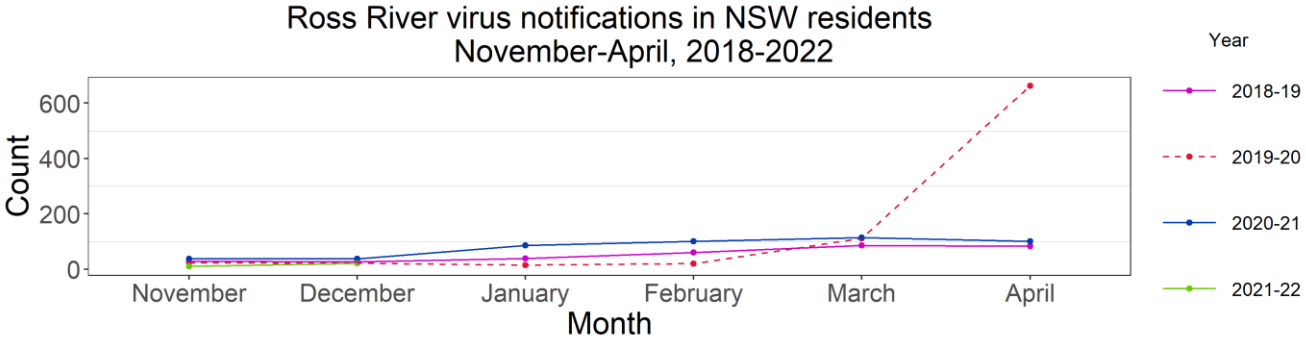
The data for Ross River virus and Barmah Forest virus from the CDWR for the latest reported 3 weeks are in the following table.

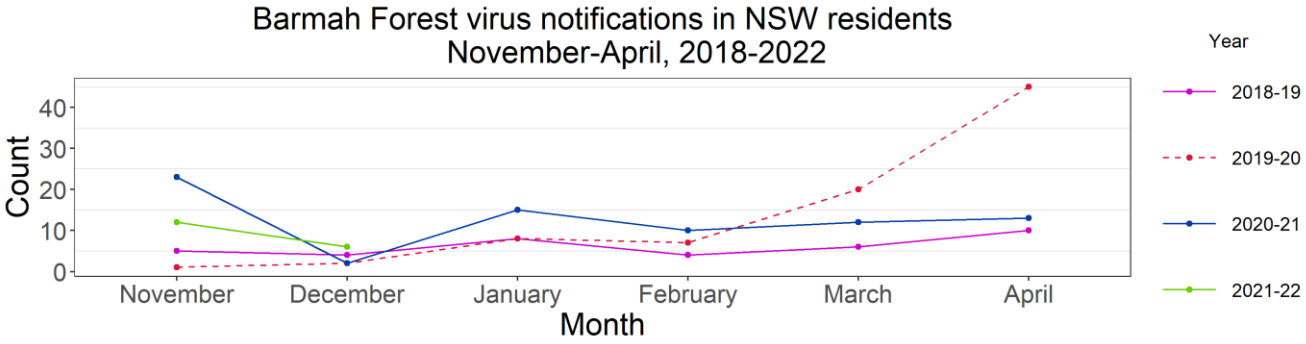
Recent notifications of Ross River virus and Barmah Forest virus infections in humans
(by date of case report received)

	Week		
	Latest week (9 - 15 Jan 2022)	**1-week prior (2 - 8 Dec 2021)**	**2-weeks prior (12 - 18 Dec 2021)**
Ross River virus	16	11	2
Barmah Forest virus	0	0	0

Source: CDWR, Communicable Diseases Branch, Health Protection NSW, NSW Health

Notifications of Ross River and Barmah Forest virus infections, by month of disease onset (the earlier of patient-reported onset or specimen collection date), are available online at: https://www1.health.nsw.gov.au/IDD/pages/data.aspx. The following figures show this data for the current NSW Arbovirus and Mosquito Monitoring season (November 2021 to April 2022), 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

Notes: The data for the previous month are the notifications to date (data extracted on 24 January 2022). Notifications are for NSW residents, regardless of whether the infection was acquired or diagnosed in NSW. Notifications of Ross River virus and Barmah Forest virus infection lag the date of acquiring the infection due to the time taken for symptom development, diagnosis, notification, and other factors. The weekly numbers by date of notification are useful for monitoring recent short-term trends but represent infections that were acquired some time ago. The monthly numbers by date of onset are more timely but less exact because they represent the earlier of patient-reported onset or specimen collection date and are therefore useful for monitoring general trends in human arboviral disease over the course of a season.