

# NSW Arbovirus Surveillance & Mosquito Monitoring 2021-2022

Weekly Update: Week ending 30 April 2022

(Report Number 25)



# Summary

## Arbovirus Detections

- **Sentinel Chickens:** There were no arbovirus detections in sentinel chickens.
- **Mosquito Isolates:** Ross River virus was detected in mosquitoes collected at Port Macquarie.

## Mosquito Abundance

- **Inland:** Surveillance has ended for inland sites for the 2021-22 season.
- **Coast:** LOW at Kempsey, Merimbula, Tweed and Wyong MEDIUM at Coffs Harbour, Lake Cathie and Port Macquarie, HIGH at Ballina and Gosford.
- **Sydney:** LOW at Paramatta, Sydney and Penrith, MEDIUM at Bankstown and Hawkesbury, HIGH at Liverpool City, Sydney Olympic Park and Northern Beaches.

## Environmental Conditions

- **Climate:** In the week ending 30 April 2022, there was moderate rainfall across most of NSW. Above average rainfall is expected in NSW during May 2022. Higher than usual minimum temperatures are expected across NSW in May and maximum temperatures are likely to be about average.
- **Tides:** High tides over 1.8 metres are predicted for 15-20 May 2022 which could trigger hatching of *Aedes vigilax*.

## Human Arboviral Disease Notifications

- **Ross River Virus:** 4 cases were notified in the week ending 23 April 2022.
- **Barmah Forest Virus:** 3 cases were notified in the week ending 23 April 2022.

## Comments and other findings of note

Stratford virus was detected in mosquitoes trapped in the Northern Beaches in the past week. Human cases of Stratford virus are very rarely reported in Australia and may present as a mild self-limiting febrile illness with body aches.

### Weekly reports are available at:

[www.health.nsw.gov.au/environment/pests/vector/Pages/surveillance.aspx](http://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](mailto: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.

SPHN (HP NSW) 211005

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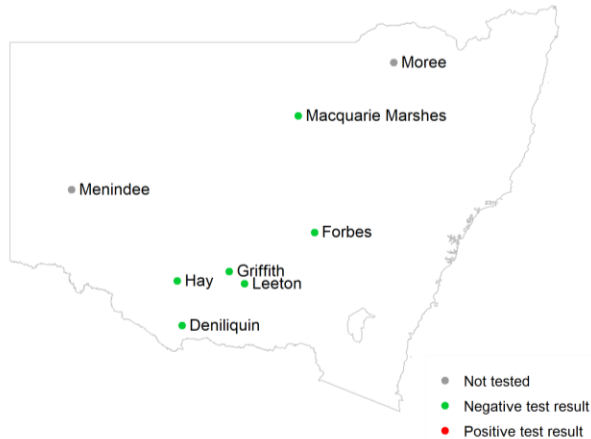
## Arbovirus Detections

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. A test result is shown if it has been reported in the last two weeks. Chicken bleeds have ceased for the 2021-22 season; however, laboratory tests are still being reported on samples collected prior to the end of blood collections on 16 April 2022.

#### 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). Ross River virus was detected in mosquitoes collected at Port Macquarie this reporting week.

#### Test results for mosquito trapping sites in the latest week to 30 April 2022 (by date of report)

##### Coastal sites



## Sydney Sites



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

Date of sample collection	Location	Virus
26/04/2022	Port Macquarie	Ross River virus
12/04/2022	Northern Beaches	Ross River virus

## Mosquito Abundance

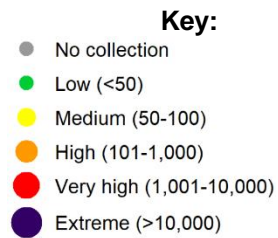
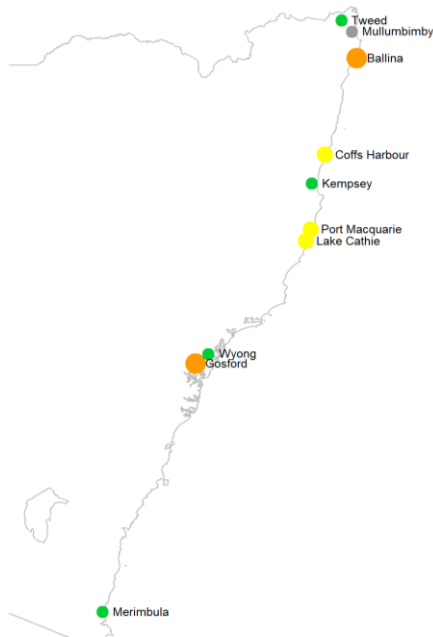
This section details counts of mosquitoes in the NSW Arbovirus Surveillance and Mosquito Monitoring Program. Each location represents the count average for all trapping sites at that location for the most recent week that collections were provided prior to preparation of this report.

*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 30 April 2022 (by date of report)

#### Coastal sites

#### Total mosquito counts



#### *Culex annulirostris* counts

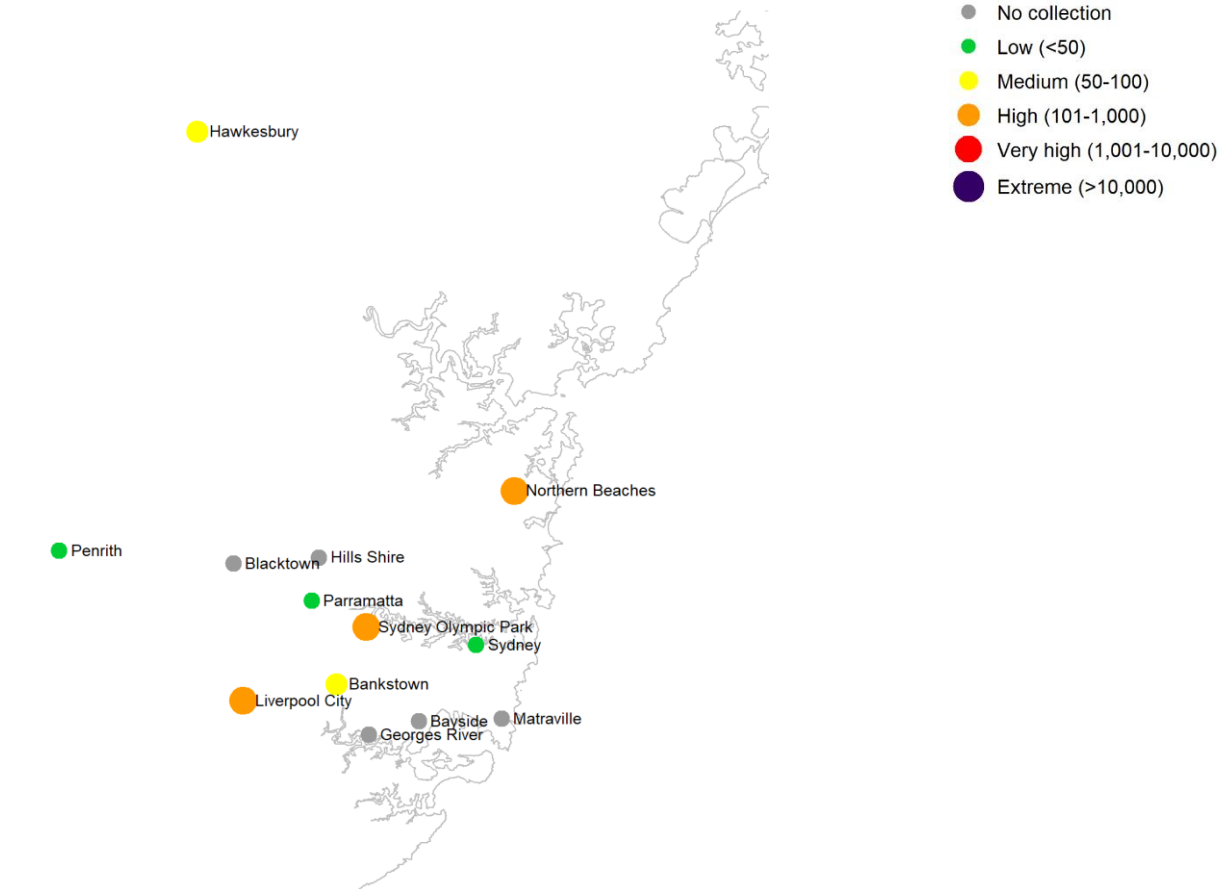


#### *Aedes vigilax* counts



## Sydney sites

### Total mosquito counts



### *Culex annulirostris* counts



### *Aedes vigilax* counts



### Mosquito abundance data for 2021-22 season to date

**Key:**

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

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 (mosquito monitoring has ended for the 2021-22 season)**

		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	30	7	14	21	28
Albury	<i>Cx. annul</i>	Low	Low	Low	Low	High	Low	High				High	High		High	High	High	High	Low	Low	High	Low	Low	Low	Low	Low					
	Total	Low	Low	Low	High	High	High	High				High	High		High	High	High	High	Low	Low	High	Low	Low	Low	Low	Low					
Bourke	<i>Cx. annul</i>				Low			Low	Low		High		Low	Low	Low	Low		Low	Low	Low	Low	Low		Low							
	Total				Low			High	High		High		Low	Low	Low	Low		Low	Low	Low	Low	Low		Low							
Forbes	<i>Cx. annul</i>	High	High	Low	High	High	High	Very High			High	Very High	Very High	High	Low	High	High	High	High	Low	Low	Low	Low	Low	Low	Low					
	Total	High	High	Low	High	High	High	Very High			High	Very High	Very High	High	Low	High	High	High	High	Low	Low	Low	Low	Low	Low	Low					
Griffith	<i>Cx. annul</i>			Low	High	Low	High	Very High				High	Very High	High		High	Very High	High		High	High		High	Low	Low	Low					
	Total			Low	High	Low	High	Very High				High	Very High	High		High	Very High	High		High	High		High	Low	Low	Low					
Leeton	<i>Cx. annul</i>		Low	Low	Low	Low	Low	High		Low	High	High	High	Very High	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low						
	Total		High	Low	Low	Low	Low	High		Low	High	High	High	Very High	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low						
Macquarie Marshes	<i>Cx. annul</i>							High			Low			Low	Low					Low				High							
	Total							High			Low			Low	Low					Low				High							
Wagga Wagga	<i>Cx. annul</i>	Low	Low	Low	Low	Low	Low	Low			High	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low						
	Total	Low	Low	Low	Low	Low	Low	High			High	High	High	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low						

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	30	7	14	21	28
Ballina	<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																														
Lake Cathie	<i>Cx. annul</i>																														
	<i>Ae. vigilax</i>																														
	Total																														
Merimbula	<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																														



# Sydney

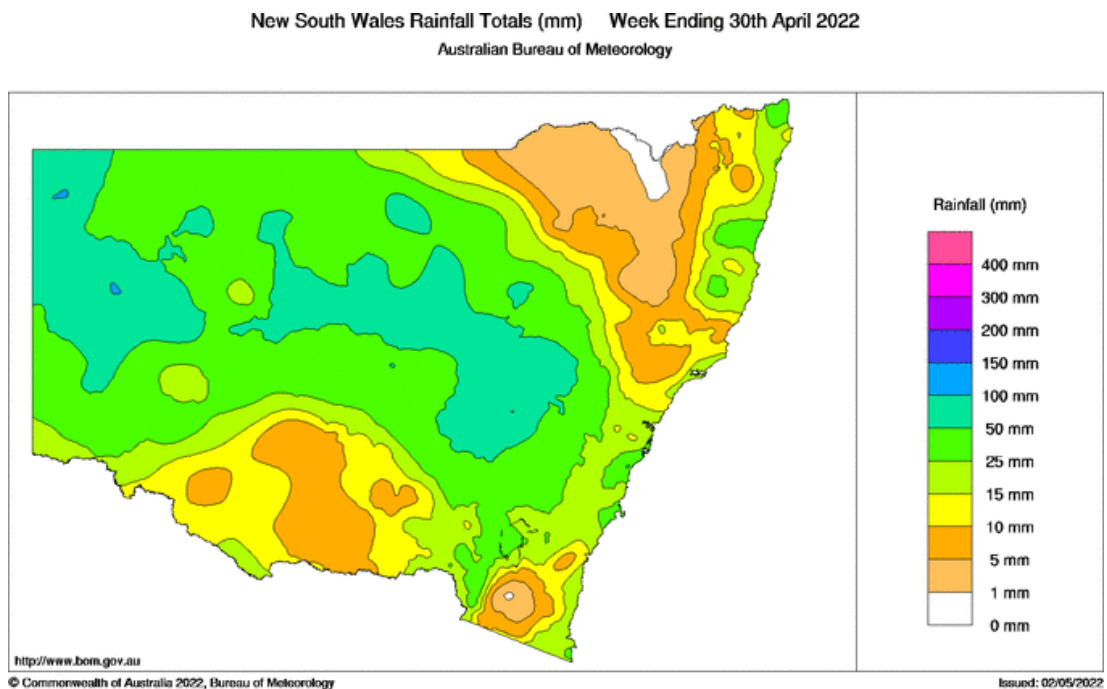
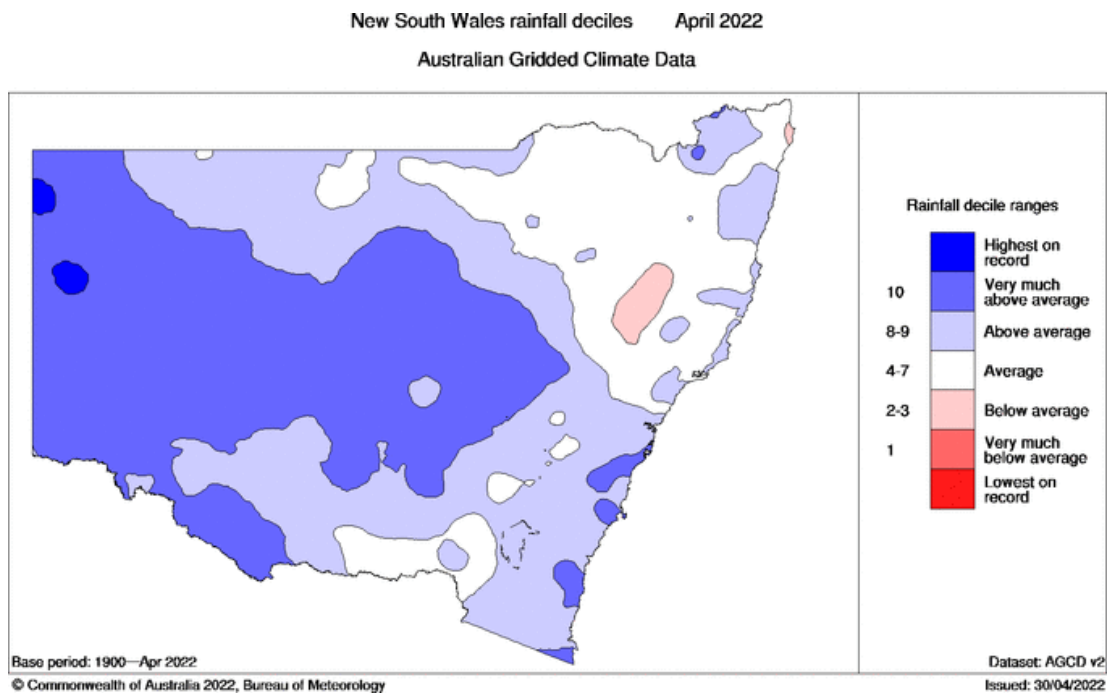
		WEEK ENDING																													
		Nov-21				Dec-21				Jan-22				Feb-22				Mar-22				Apr-22				May-22					
Location	Mosquito	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	30	7	14	21	28
Bankstown	<i>Cx. annul</i>																														
	<i>Ae. vigilax</i>																														
	Total																														
Blacktown	<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																														
Bayside	<i>Cx. annul</i>																														
	<i>Ae. vigilax</i>																														
	Total																														
Matraville	<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																														
Sydney	<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 April, rainfall was very much above average in Central and Far West NSW. In the week ending 30 April 2022, there was moderate rainfall across most of 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 NSW is likely to receive above average rainfall for May.

[www.bom.gov.au/climate/outlooks/#/rainfall/median/monthly/0](http://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 May. Maximum temperatures are likely to be about average.

[www.bom.gov.au/climate/outlooks/#/temperature/maximum/median/monthly/0](http://www.bom.gov.au/climate/outlooks/#/temperature/maximum/median/monthly/0)

[www.bom.gov.au/climate/outlooks/#/temperature/minimum/median/monthly/0](http://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 May

- 15-20 May 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](http://www.health.nsw.gov.au/Infectious/reports/Pages/CDWR.aspx).

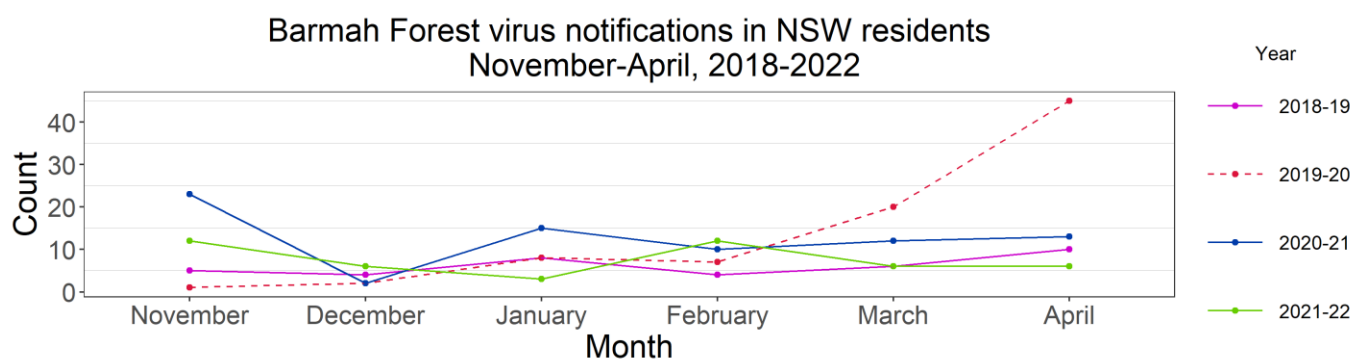
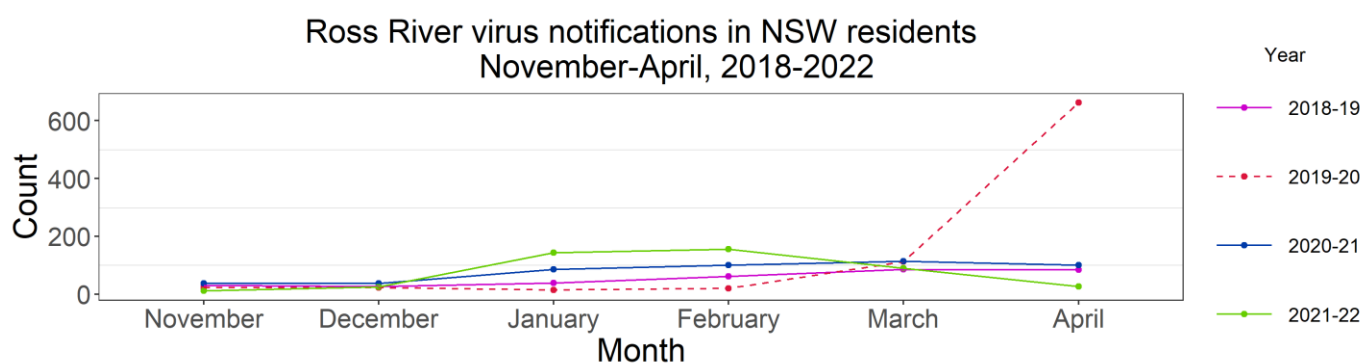
The data for Ross River virus and Barmah Forest virus from the CDWR for the latest reported 3 weeks are in the following table.

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

	Week		
	Latest week (17 – 23 April 2022)	1-week prior (10 – 16 April 2022)	2-weeks prior (3 – 9 April 2022)
<b>Ross River virus</b>	4	11	10
<b>Barmah Forest virus</b>	3	0	3

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: [www1.health.nsw.gov.au/IDD/pages/data.aspx](http://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 2 May 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.