NSW Arbovirus Surveillance & Mosquito Monitoring 2020-2021

Weekly Update: Week ending 15 May 2021

(Report Number 27)

NSW GOVERNMENT

Summary

Arbovirus Detections

- **Sentinel Chickens:** The Arbovirus Sentinel Chicken Surveillance Program has ended for the 2020-21 season.
- **Mosquito Isolates:** There were no Barmah Forest and Ross River virus detections in mosquito isolates in this reporting period.

Mosquito Abundance

- **Inland:** Surveillance has ended for inland sites for the 2020-21 season.
- **Coast:** HIGH at South West Rocks and Yamba. MEDIUM at Ballina and Gosford. LOW at Coffs Harbour, Kempsey, Lake Cathie, Narooma, Port Macquarie, Tweed and Wyong.
- **Sydney:** Surveillance has ended for Sydney sites for the 2020-21 season.

Environmental Conditions

- **Climate:** In the past week, there was moderate rainfall in north eastern and south eastern NSW. There was no to low rainfall across the rest of NSW. Rainfall for the remainder of May is expected to be higher than usual in central and western NSW, and around usual across the rest of NSW. Temperatures are likely to be warmer than usual across NSW for the remainder of May.
- **Tides:** High tides over 1.8 metres are predicted to occur between 24 - 30 May, which could trigger hatching of *Aedes vigilax.*

Human Arboviral Disease Notifications

- **Ross River Virus:** 19 cases were notified in the week ending 1 May 2021.
- **Barmah Forest Virus:** 2 cases were notified in the week ending 1 May 2021.

Comments and other findings of note

Edge Hill virus was detected in Ballina at North Creek Road on 10 May 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.

SHPN (HP NSW) 200547

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. Chicken surveillance has ended for the 2020-21 season.

Positive test results in the 2020-2021 surveillance season

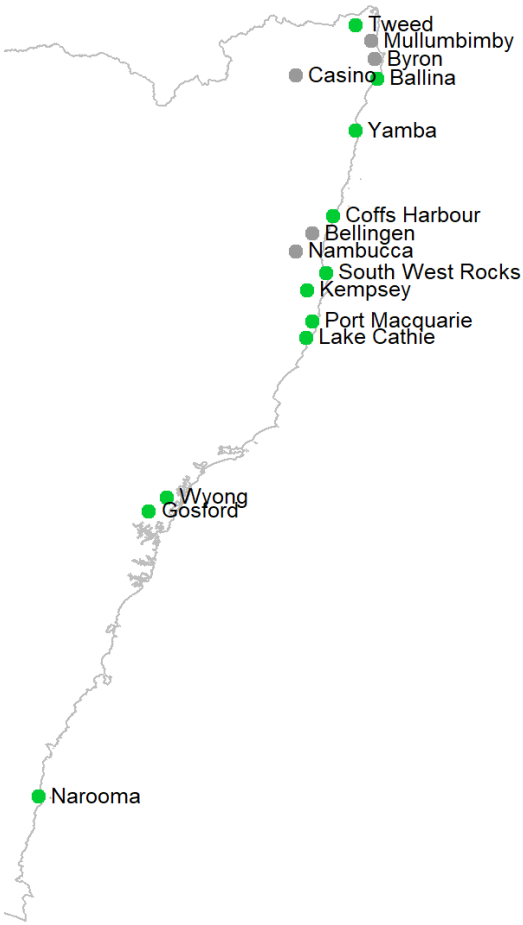
Date of sample collection	Location	Positive test results
There were no detections in sentinel chickens in the 2020-2021 surveillance season		

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 Barmah Forest and Ross River virus in this reporting week.

Test results for mosquito trapping sites in the week ending 15 May 2021

Coastal sites



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

Date of sample collection	Location	Virus
There have been no Ross River and Barmah Forest viruses detected in the past three weeks.		

Mosquito Abundance

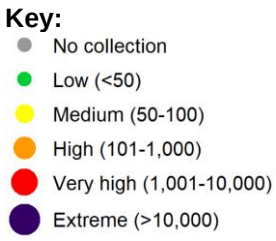
This section details counts of mosquitoes in the NSW Arbovirus Surveillance and Mosquito Monitoring Program. Each location represents the count average for all trapping sites at that location for specimens collected in the current reporting week.

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

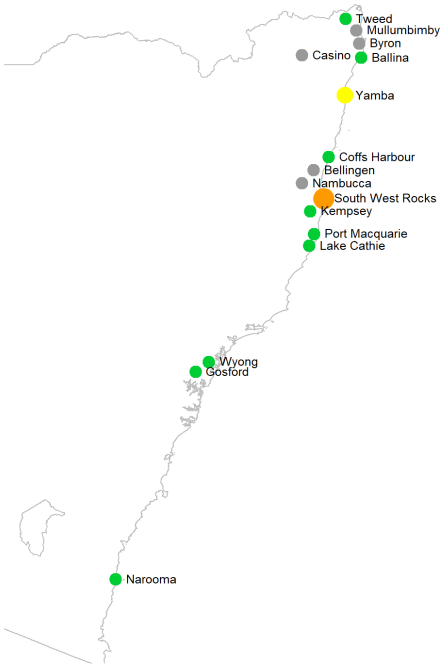
Mosquito counts in the week ending 15 May 2021

Coastal sites

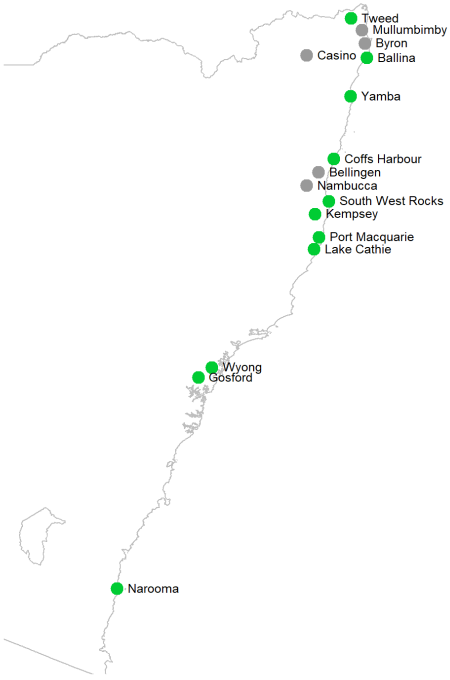
Total mosquito counts



***Culex annulirostris* counts**

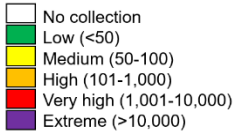


***Aedes vigilax* counts**



Mosquito abundance data for 2020-21 season to date

Key:

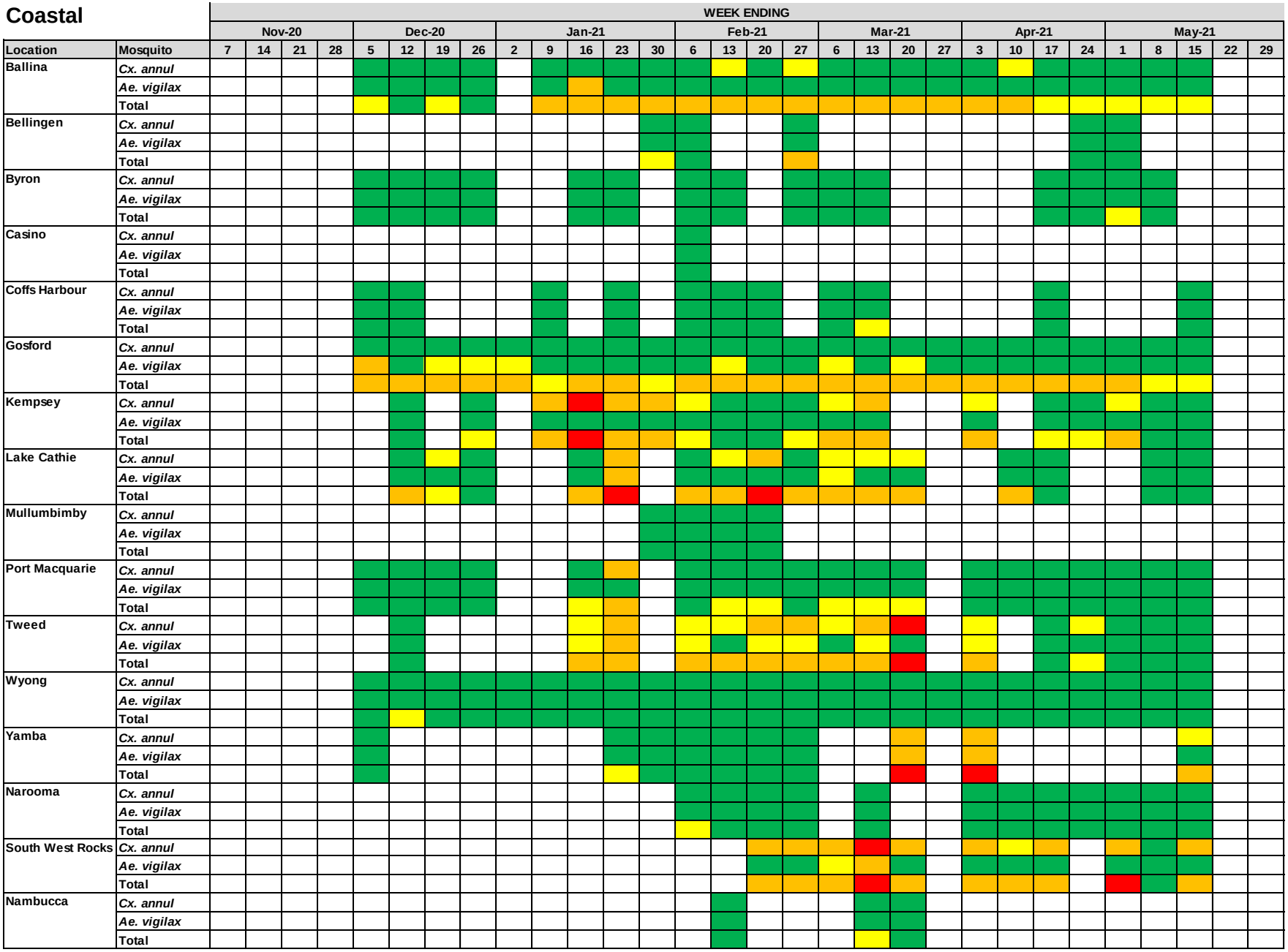


Data in the below tables represent the average for all trapping sites at that location. "*Cx. annul*" refers to *Culex annulirostris* and "*Ae.vigilax"* refers to *Aedes vigilax*.

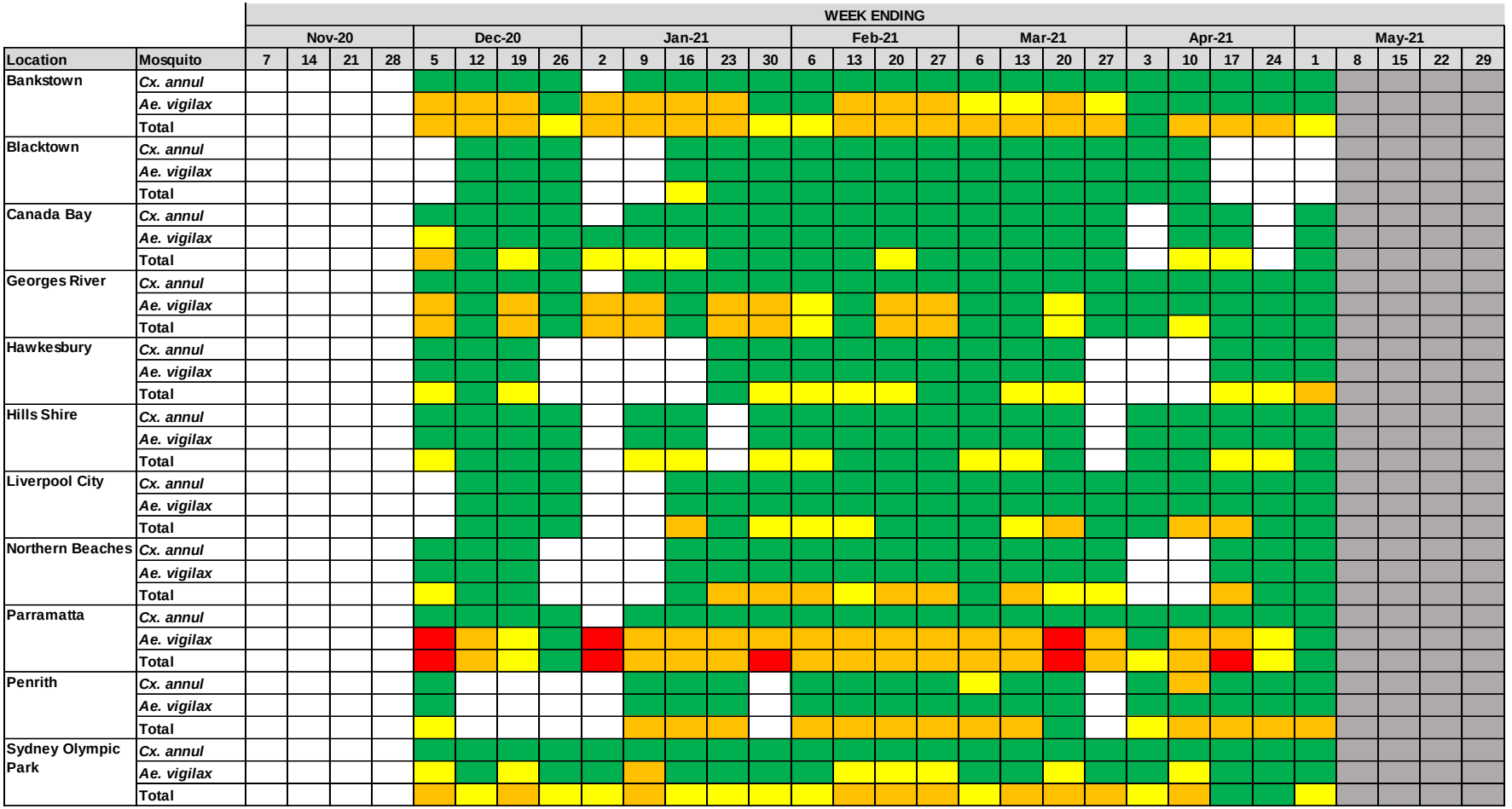
Inland

		WEEK ENDING																												
		Nov-20				Dec-20				Jan-21					Feb-21				Mar-21				Apr-21				May-21			
Location	**Mosquito**	**7**	**14**	**21**	**28**	**5**	**12**	**19**	**26**	**2**	**9**	**16**	**23**	**30**	**6**	**13**	**20**	**27**	**6**	**13**	**20**	**27**	**3**	**10**	**17**	**24**	**1**	**8**	**15**	**22**	**29**
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-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
May-21
Location
Mosquito
7 14 21 28 5 12 19 26 2 9 16 23 30 6 13 20 27 6 13 20 27 3 10 17 24 1 8 15 22 29
Ballina
Cx. annul
Ae. vigilax
Total
Bellingen
Cx. annul
Ae. vigilax
Total
Byron
Cx. annul
Ae. vigilax
Total
Casino
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
Yamba
Cx. annul
Ae. vigilax
Total
Narooma
Cx. annul
Ae. vigilax
Total
South West Rocks
Cx. annul
Ae. vigilax
Total
Nambucca
Cx. annul
Ae. vigilax
Total

Sydney

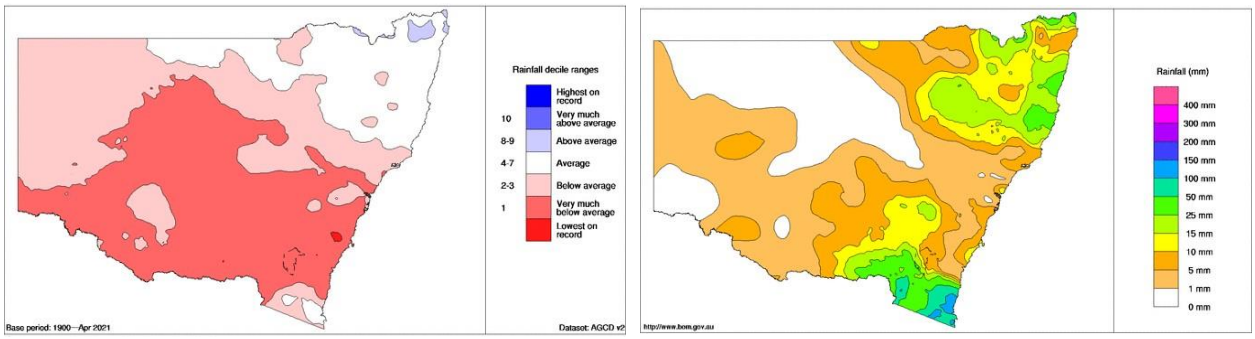

WEEK ENDING
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
May-21
Location
Mosquito
7 14 21 28 5 12 19 26 2 9 16 23 30 6 13 20 27 6 13 20 27 3 10 17 24 1 8 15 22 29
Bankstown
Cx. annul
Ae. vigilax
Total
Blacktown
Cx. annul
Ae. vigilax
Total
Canada Bay
Cx. annul
Ae. vigilax
Total
Georges River
Cx. annul
Ae. vigilax
Total
Hawkesbury
Cx. annul
Ae. vigilax
Total
Hills Shire
Cx. annul
Ae. vigilax
Total
Liverpool City
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

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 average in north eastern NSW. Across the rest of NSW, rainfall was below average (left). In the week ending 15 May 2021, there was moderate rainfall in north eastern and south eastern NSW. There was no to low rainfall across the rest of NSW (right).



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

Upcoming month's rainfall and temperature outlook

The Bureau of Meteorology's rainfall outlook map predicts higher than usual rainfall in central and western NSW, and around usual rainfall across the rest of NSW for the remainder of May.
www.bom.gov.au/climate/outlooks/#/rainfall/median/monthly/0

The Bureau of Meteorology's temperature outlook maps predict that maximum temperatures for the remainder of May are likely to be higher than usual across NSW. Minimum temperatures for the remainder of May are likely to be higher than usual in northern NSW, and around usual across the rest 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

- 24-30 May 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.

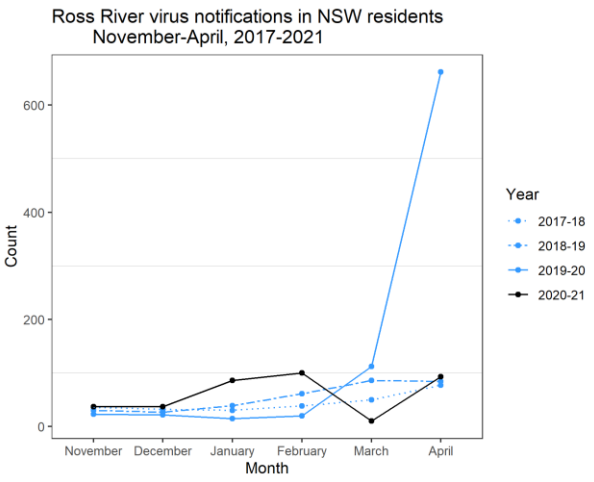
Recent notifications of Ross River virus and Barmah Forest virus in humans
(by date of case report received)

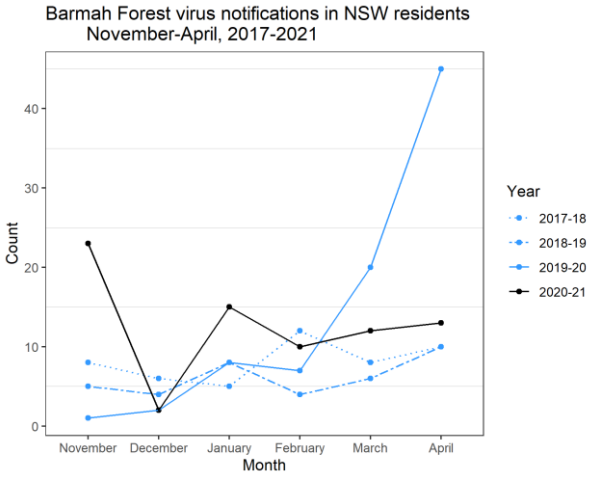
	Week		
	Latest week (25 Apr - 1 May 2021)	**1 week prior (18 – 24 Apr 2021)**	**2 weeks prior (11 – 17 Apr 2021)**
Ross River virus	19	19	23
Barmah Forest virus	2	3	2

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 17 May 2021).