NSW Arbovirus Surveillance and Mosquito Monitoring 2024-2025

Environmental Health Branch, Health Protection NSW

Weekly Update: Week ending 21 December 2024

Bottom left - Common banded mosquito, *Culex annulirostris* **Top and bottom right** - Saltmarsh mosquito, *Aedes vigilax* (Copyright 2020)

Weekly reports are available on Mosquito-borne disease surveillance.

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 are provided by the Department of Medical Entomology, NSW Health Pathology, Institute of Clinical Pathology and Medical Research (ICPMR) for mosquito surveillance, and the Arbovirus Emerging Diseases Unit, NSW Health Pathology (ICPMR) for sentinel chicken surveillance.

SPHN (EH) 241091

Summary

Arbovirus Detections

Sentinel Chickens

• Murray Valley encephalitis virus was detected in a chicken in Cowra from a sample taken on 5 December 2024.

Mosquito Isolates

• Ross River virus was detected in mosquitoes trapped in Lake Wyangan, Griffith on 18 December 2024.

Mosquito Abundance

Inland

LOW: Balranald, Bourke and Murrumbidgee.

MEDIUM: Albury, Wagga Wagga and Wilcannia.

HIGH: Forbes, Griffith, Moree and Yass.

Coastal

LOW: Byron Bay, Gosford, Kempsey, Lake Cathie, Port Macquarie, Wauchope and Wyong.

MEDIUM: Batemans Bay, Coffs Harbour and Narooma.

HIGH: Ballina.

Sydney

LOW: Bankstown, Blacktown, Cumberland, Earlwood, Georges River, Hawkesbury, The Hills, Northern Beaches, Parramatta and Penrith.

MEDIUM: Canada Bay and Sydney Olympic Park.

HIGH: Liverpool.

Environmental Conditions

Climate

- In the week ending 21 December 2024, rainfall was well below average across NSW. It was about average in the eastern part of the state just below the Queensland border.
- In the coming week, 26 December 2024 to 1 January 2025, rainfall is expected to be below average across NSW.
- Minimum temperatures are expected to be higher than average in the eastern half of the state, especially in areas along the coast. Minimum temperatures are expected to be about average elsewhere across the state, with cooler temperatures in areas along the Victorian border.
- Maximum temperatures are expected to be very much above average across most of NSW, with temperatures being slightly cooler but still above average in the western part of the state.

Tides

- High tides over 1.8 metres are predicted for 31 December 2024 - 4 January 2025, 11-16 January 2025 and 28 January 2025 - 2 February 2025 which could trigger hatching of *Aedes vigilax*.

Human Arboviral Disease Notifications

Ross River Virus

Two probable cases were notified in the week ending 21 December 2024.

Barmah Forest Virus

One probable case was notified in the week ending 21 December 2024.

Arbovirus Detections

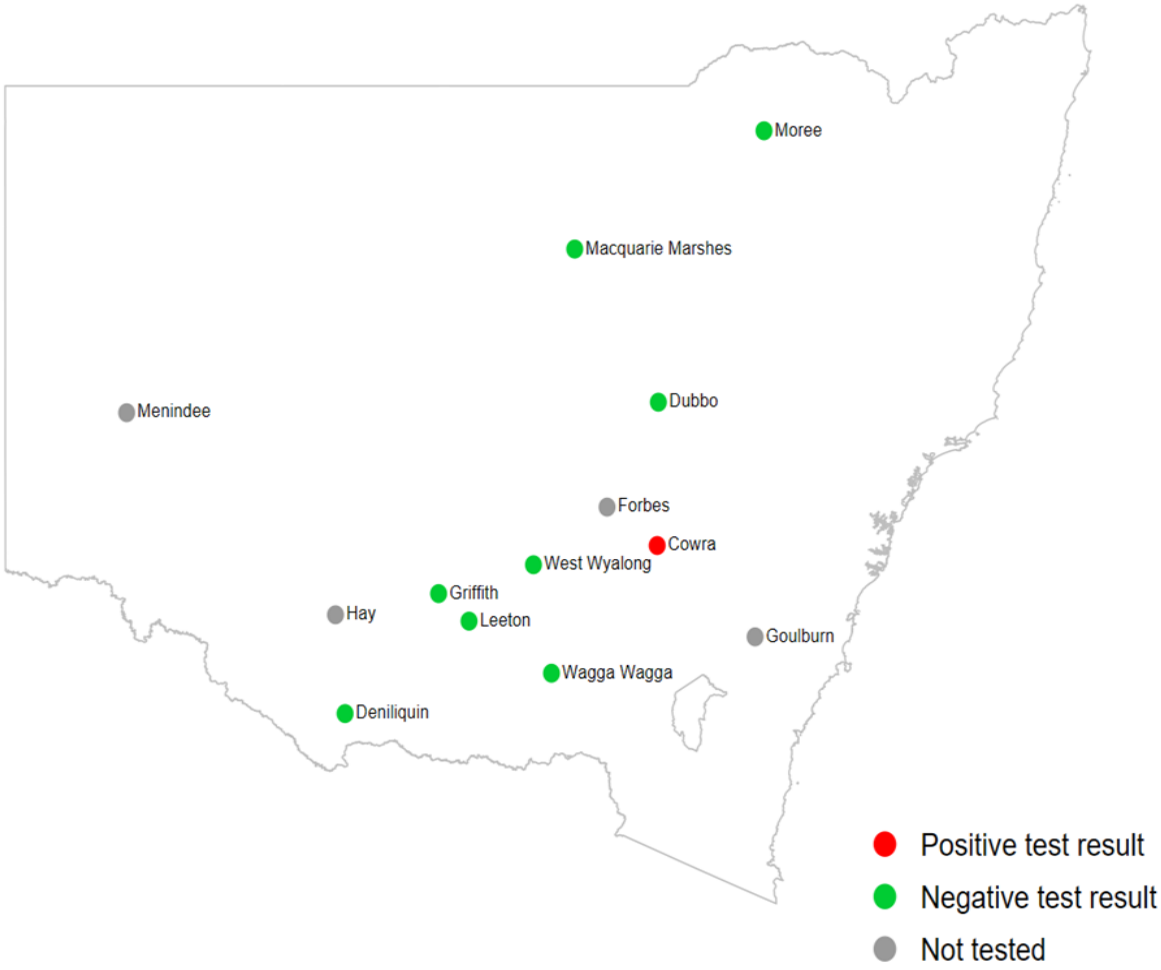
This section details detections of Murray Valley encephalitis virus, Japanese encephalitis virus, Kunjin virus, Ross River virus and Barmah Forest virus in the NSW Arbovirus Surveillance and Mosquito Monitoring Program.

Sentinel chickens

Chickens are bled for detection of antibodies directed against Murray Valley encephalitis virus, Japanese encephalitis virus and Kunjin virus, indicating exposure to these viruses. Test results for the past week are shown in the map below. A positive test result indicates one or more chickens in a flock tested positive for the **first time** to antibodies directed against a particular virus, indicating newly acquired infection.

Sentinel chicken antibody test results for samples collected in the week ending 21 December 2024

In the week ending 21 December 2024, Murray Valley encephalitis virus was detected in a chicken in Cowra (sample date 5 December 2024).



There has been a detection of Murray Valley encephalitis virus in a sentinel chicken in Cowra during the 2024-2025 surveillance season.

Mosquito isolates

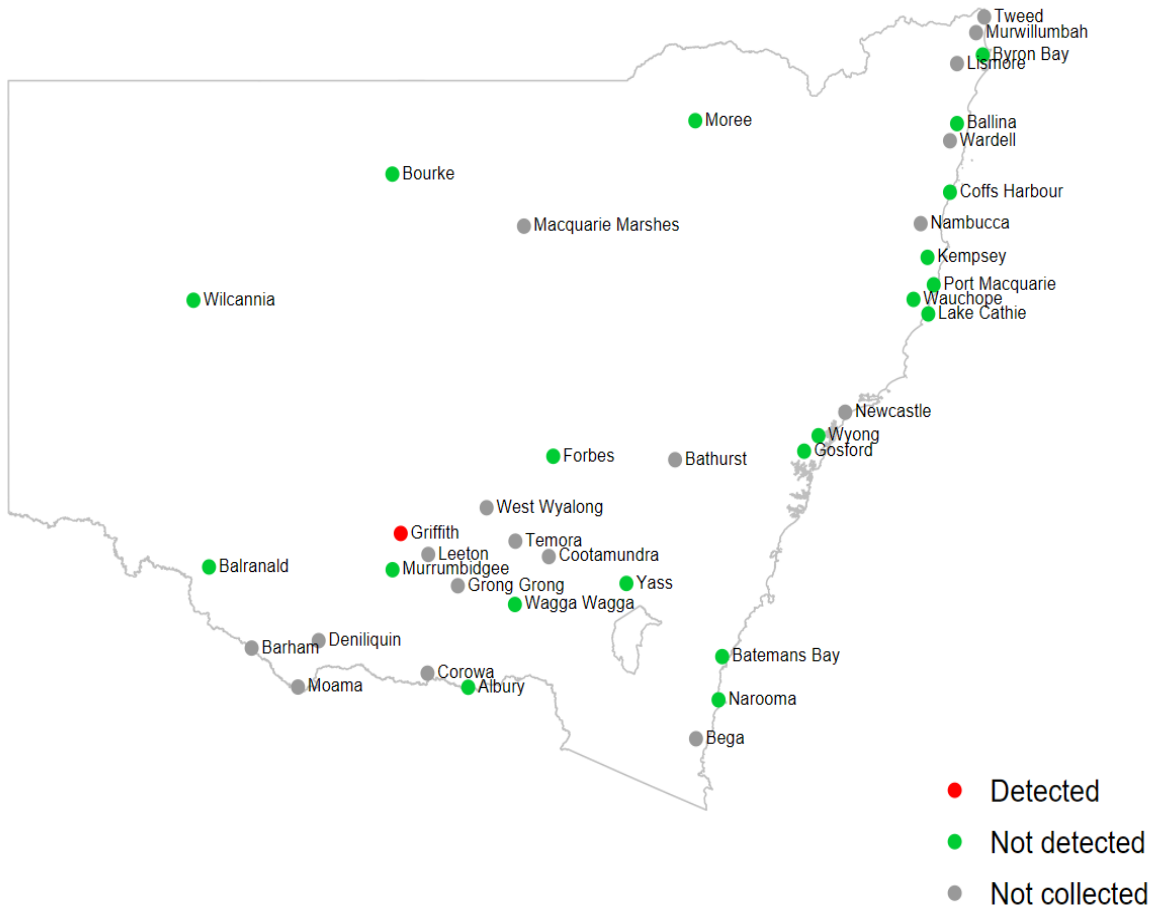
Whole grinds of collected mosquitoes are tested for arbovirus nucleic acids to determine the presence of arboviruses in mosquitoes. Test results for detections of Murray Valley encephalitis virus, Japanese encephalitis virus, Kunjin virus, Ross River virus and Barmah Forest virus for the past week are shown in the maps below. Detections of all arboviruses (including Edge Hill virus and Kokobera virus) for the season are detailed in the positive test results for the 2024-2025 surveillance season.

Test results for mosquito trapping sites reported in the week ending 21 December 2024

In the week ending 21 December 2024, Ross River virus was detected in trapped mosquitoes in Griffith.

Inland and coastal sites

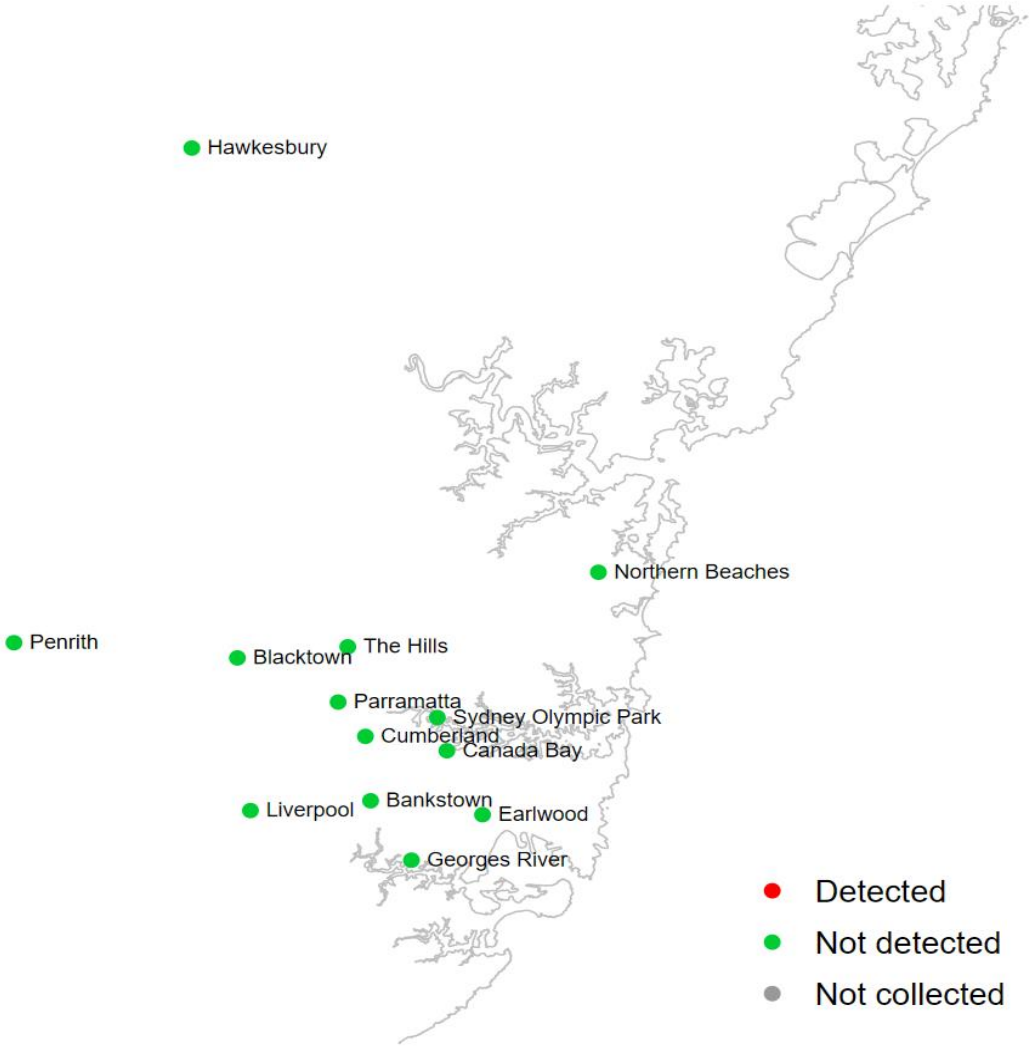
The map highlights detections of arboviruses that can cause human notifiable conditions, such as Murray Valley encephalitis virus, Japanese encephalitis virus, Kunjin virus, Ross River virus, and Barmah Forest virus. Detections of all arboviruses (including Edge Hill virus, Stratford virus and Kokobera virus) for the season are detailed in the positive test results for the 2024-2025 surveillance season.



There has been a detection of Japanese encephalitis virus and Ross River virus in mosquitoes trapped in Griffith this arbovirus season.

Sydney sites

The map highlights detections of arboviruses that can cause human notifiable conditions, such as Murray Valley encephalitis virus, Japanese encephalitis virus, Kunjin virus, Ross River virus, and Barmah Forest virus. Detections of all arboviruses (including Edge Hill virus, Stratford virus and Kokobera virus) for the season are detailed in the positive test results for the 2024-2025 surveillance season.



There have been no arbovirus detections in Sydney sites during the 2024-2025 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 the most recent week that collections were provided prior to preparation of this report.

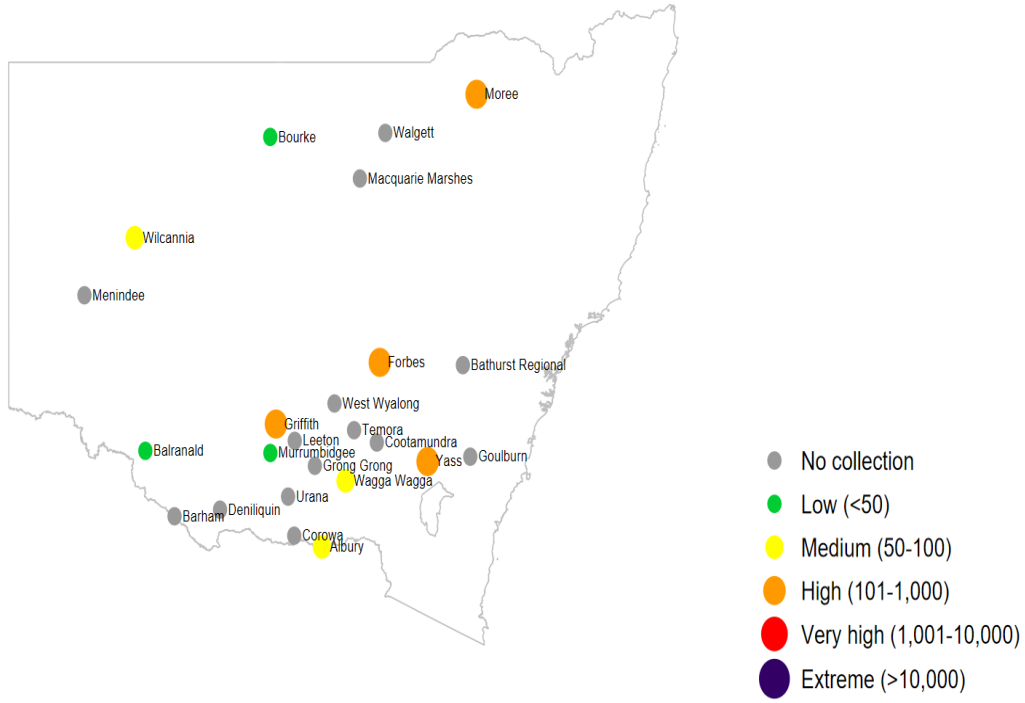
Culex annulirostris and *Aedes vigilax* are vectors of interest for Ross River virus and Barmah Forest virus, *Culex annulirostris* is also a vector for Japanese encephalitis virus.

Mosquito counts

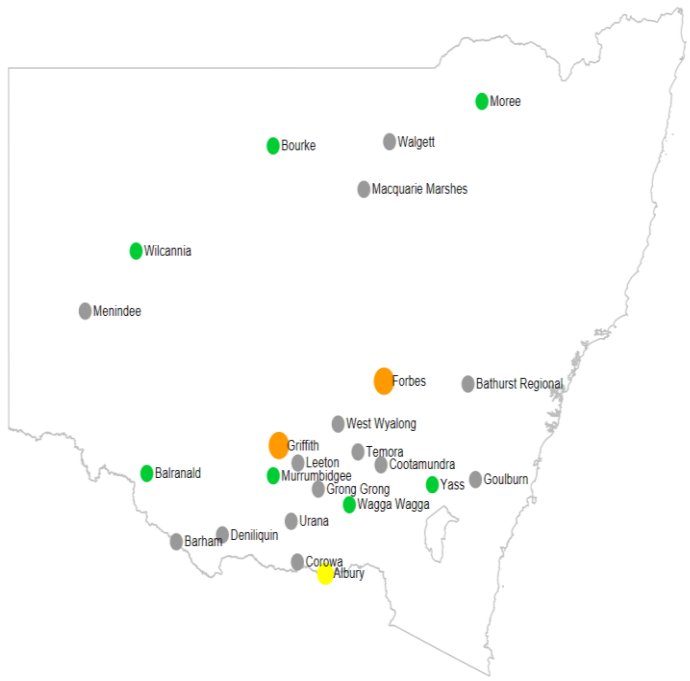
Mosquito counts (average per trap per location) for mosquito trapping sites reported in the week ending 21 December 2024

Inland sites

Total mosquito counts

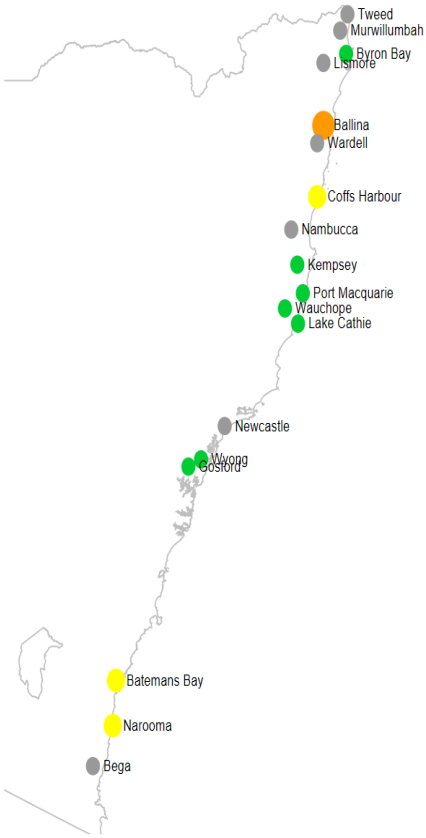


Culex annulirostris counts

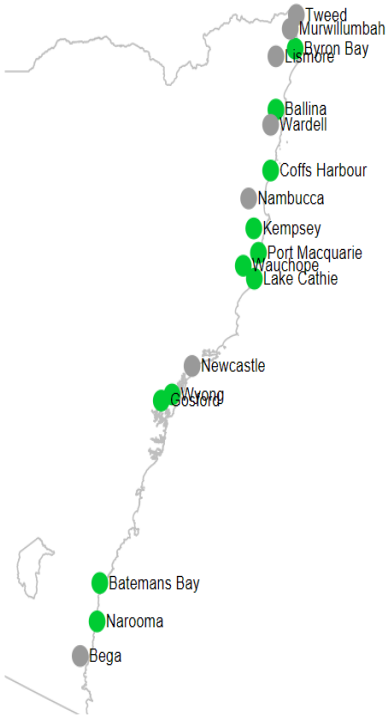


Coastal sites

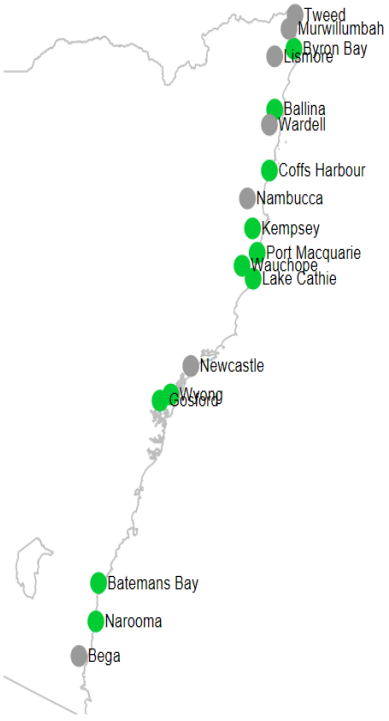
Total mosquito counts



Culex annulirostris counts

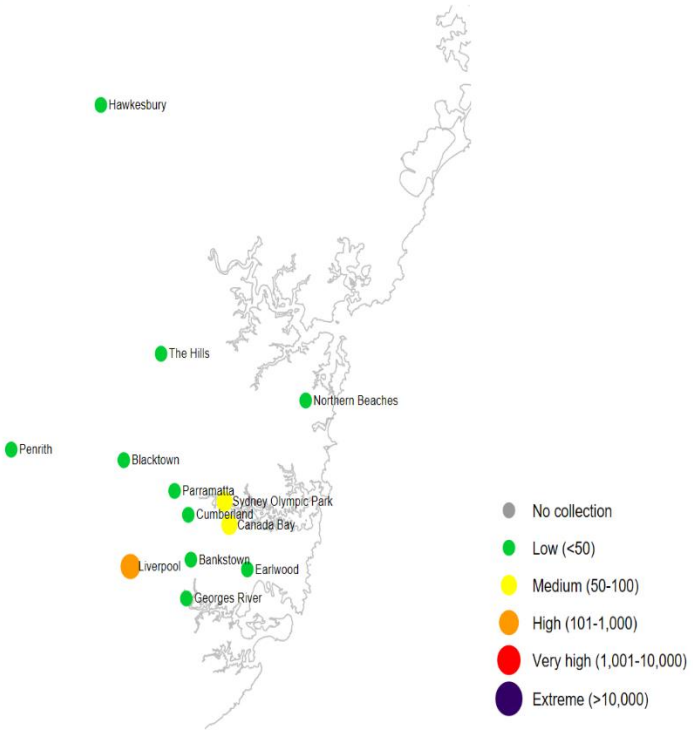


Aedes vigilax counts

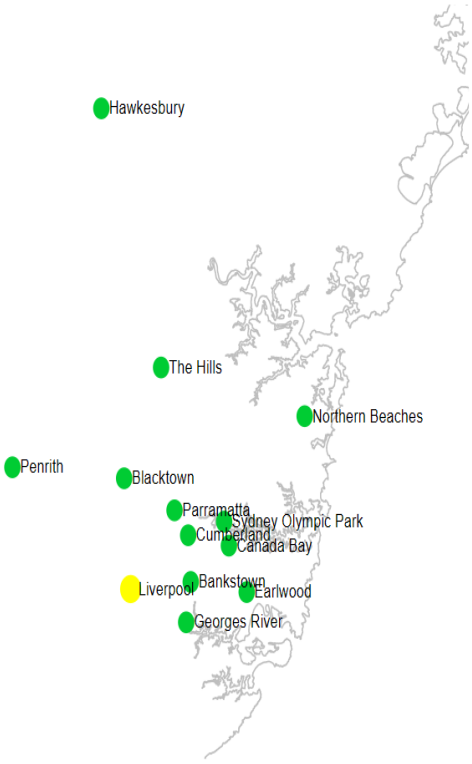


Sydney sites

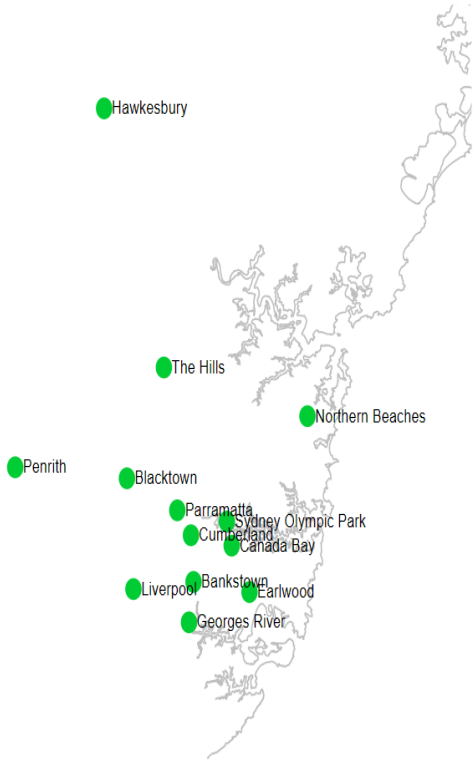
Total mosquito counts



Culex annulirostris counts



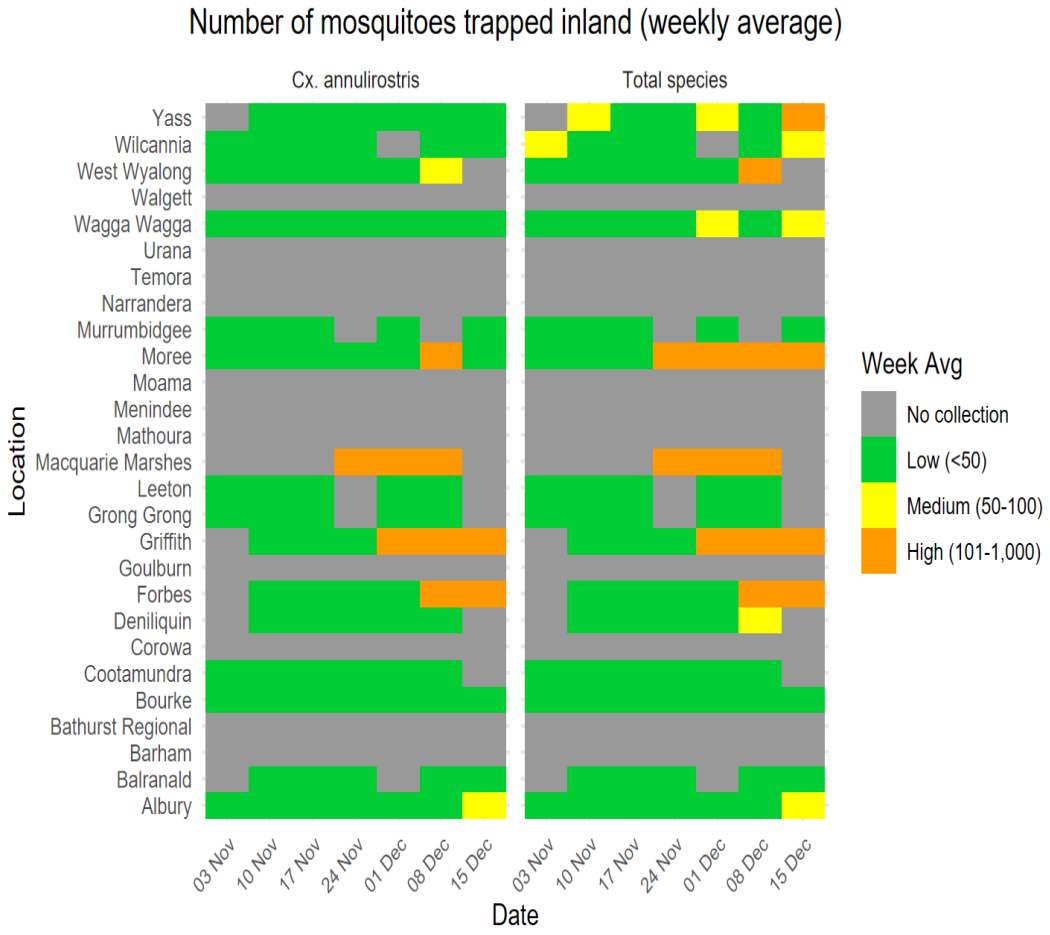
Aedes vigilax counts



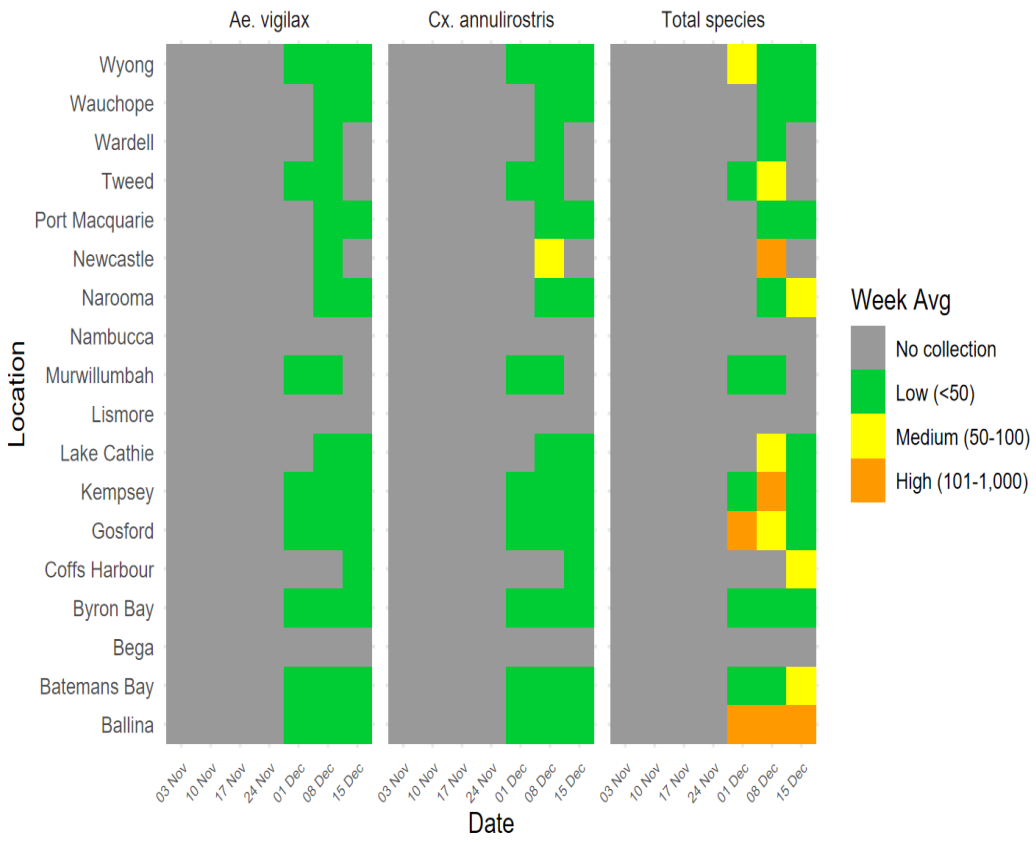
Mosquito abundance results for the 2024-2025 season

This section shows all mosquito trapping results by location and species type to date for the current arbovirus season.

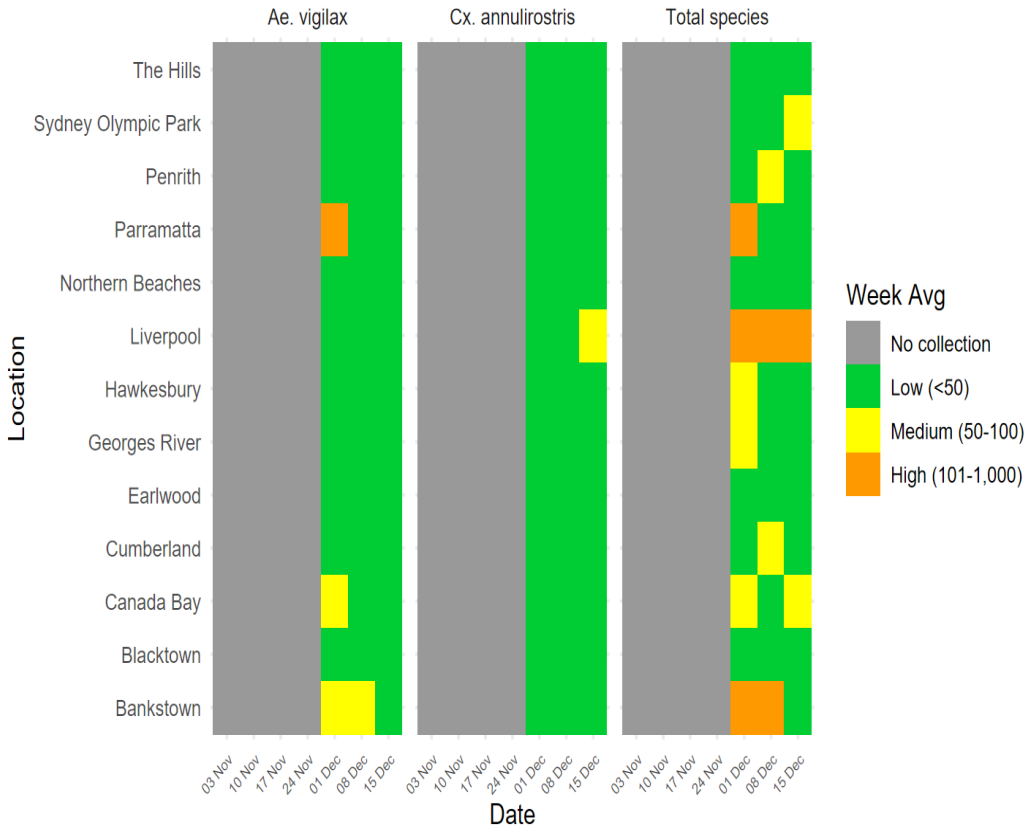
Cumulative mosquito abundance tables



Number of mosquitoes trapped along the coast (weekly average)



Number of mosquitoes trapped in Sydney (weekly average)



Human arboviral disease notifications

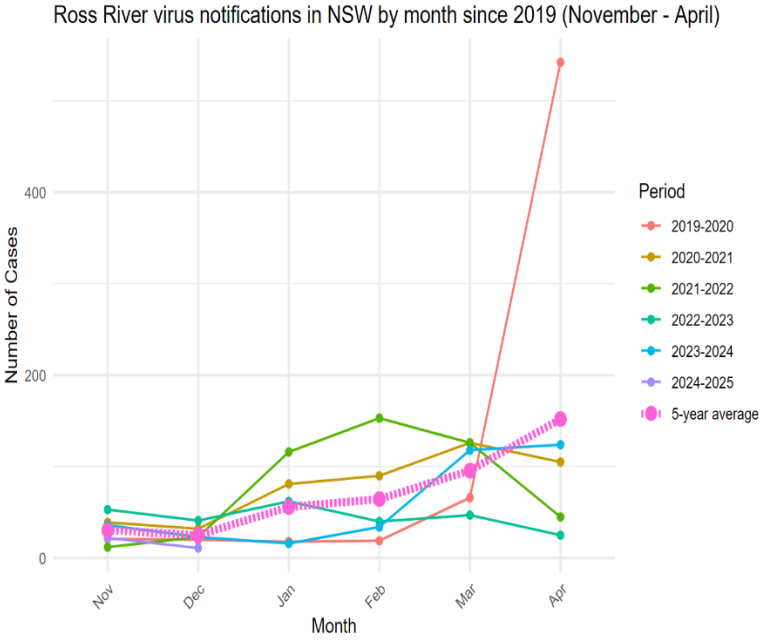
Under the *NSW Public Health Act 2010*, human arboviral infections are notifiable in NSW.

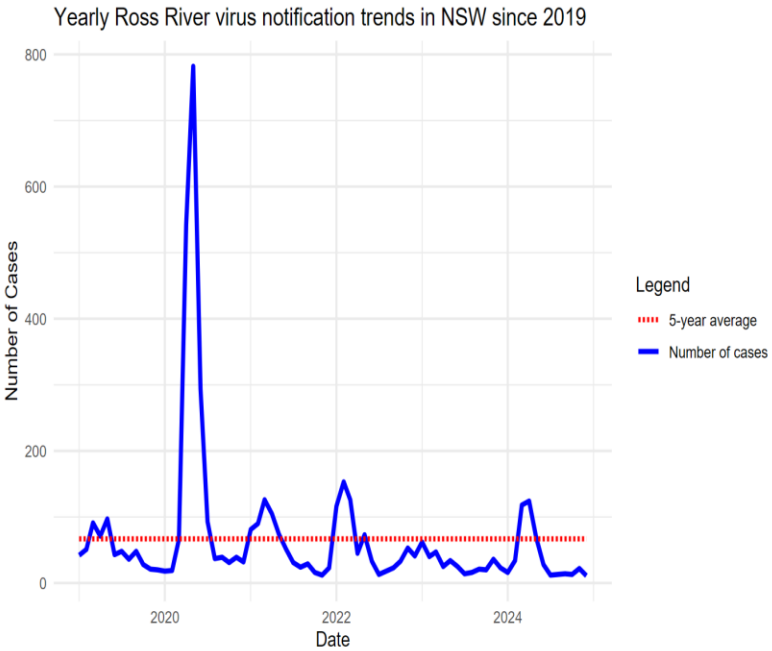
Recent notifications of Ross River virus and Barmah Forest virus infections in humans (by date of case report received)

Notifications of Ross River virus and Barmah Forest virus infections, by month of disease onset (the earlier of patient-reported onset or specimen collection date), are available online at the NSW Health website - infectious diseases data.

The following figures show notifications for the current NSW Arbovirus Surveillance and Mosquito Monitoring season (2024-2025), and the same period in the previous four years.

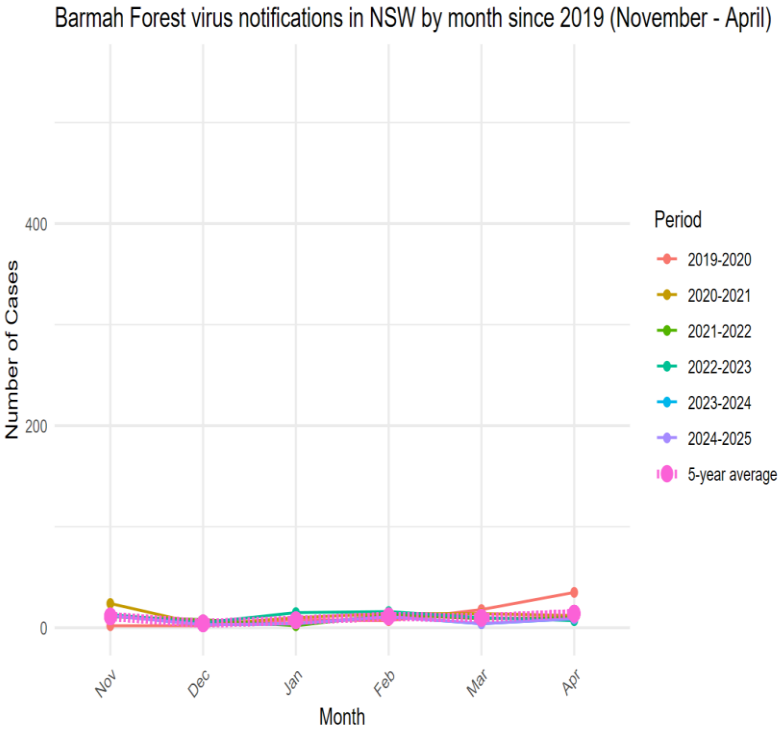
Ross River virus

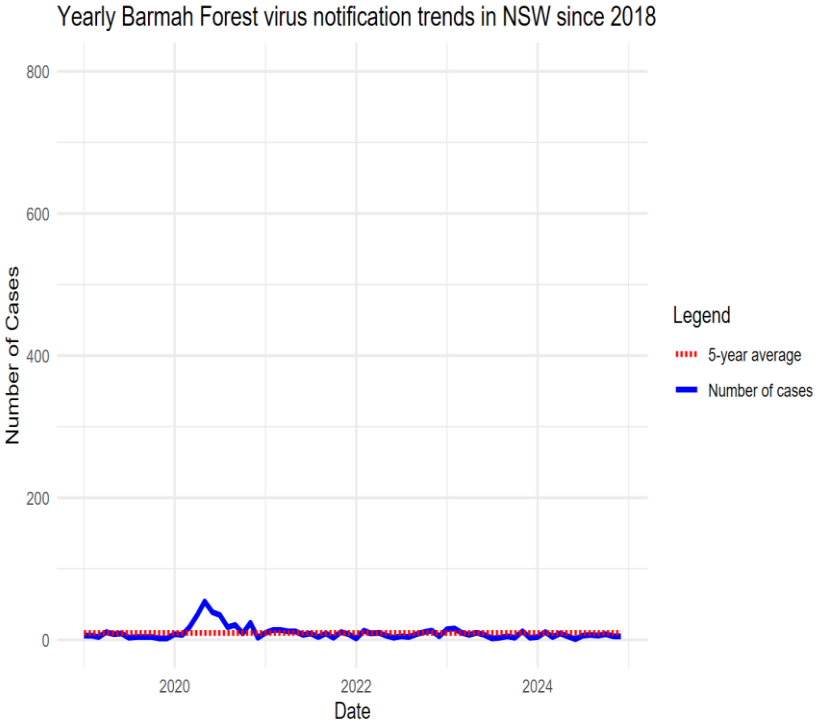




Note: Presented human cases include both confirmed and probable cases.

Barmah Forest virus





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