

# The South Australian arbovirus and mosquito monitoring report

Current hierarchy of response level 2 **MEDIUM**

The South Australian (SA) arbovirus and mosquito monitoring report summarises the most recent available data to inform the current level of risk of mosquito-borne disease in SA. This data determines the appropriate graded response in accordance with the [SA Arbovirus Coordinated Control and Operations Plan](#) (the Plan) hierarchy of response (HoR). The HoR is dependent upon on-going data and trends identified by surveillance activities, weather forecasting and disease notifications.

The broad areas of flood plain associated with the River Murray provide breeding opportunities for *Culex annulirostris*, the main vector mosquito associated with Murray Valley encephalitis virus (MVEV) and Japanese encephalitis virus (JEV). This is particularly significant after a period of high and prolonged river flow, when floodwaters recede and during times of high spring and summer rainfall spanning the months of September through to April. The most current River Murray flow report is available on the WaterConnect website [here](#).

## Meteorological data

For South Australia as a whole, April rainfall was 86% below the 1961–1990 average, the eighth driest on record since 1900. The mean temperature for South Australia was 1.63°C below the 1961–1990 average, the lowest since 1983, with some sites having their lowest April temperature on record.

Mean maximum temperatures were below average for most of the state during April, and 1.14°C below the 1961–1990 average, the lowest since 2015. Mean minimum temperatures were cooler than the 1961–1990 average across most of the state, being 2.14°C below the average and the 10th lowest on record.

The El Niño Southern Oscillation (ENSO) is neutral. Climate models indicate ENSO will likely continue to be neutral until at least July 2024. Global sea surface temperatures have been the warmest on record for each month between April 2023 and April 2024.

Source: Australian Government, [Bureau of Meteorology](#)

## Northern Adelaide mosquito surveillance program

The 2023-24 northern Adelaide mosquito surveillance program commenced on 6 September 2023 and ceased on 12 April 2024. Mosquito surveillance is conducted weekly at six locations. Mean abundance data for April trap catches show decreased abundance across all six locations compared to the 2022-23 season and decreased abundance at five trap locations compared to the 2021-22 season. See table 1.

**Table 1: Northern Adelaide mosquito surveillance program trapping mean trap abundance data April 2024 three-year comparison.**

Trap location	2022	2023	2024
Globe Derby Park Racetrack	41	55	0
Daniel Avenue Wetland	88	90	38
Swan Alley	864	949	467
TI Quarantine Station	503	681	596
TI Power Station	141	98	55
Mawson Lakes	34	20	11



## Local council mosquito surveillance

In response to the season risk level, River Murray councils continued to set between four and six adult mosquito traps in their local area fortnightly. Several non-River Murray councils continued to participate in the SA mosquito surveillance and control subsidy program, with these councils setting between four and six adult mosquito traps in their local area monthly.

All council traps containing >10 mosquitoes were submitted to the Agriculture Victoria laboratory to be processed according to trap location, counted, identified to species level, then screened for JEV, MVEV, Ross River virus (RRV), Barmah Forest virus (BFV) and West Nile virus/Kunjin (WNV/KUN). Traps containing <10 mosquito traps were not routinely submitted to Agriculture Victoria for processing.

Table 2 details the mean April trap abundance data in SA from local council traps for three seasons (where applicable). The available data shows increased mean trap abundance in six council areas compared to the 2022-23 season and decreased mean abundance in five councils compared to the 2021-22 season.

**Table 2: Local council mosquito surveillance trapping mean abundance data April 2024 three-year comparison.**

Council	2022	2023	2024
Adelaide Plains Council		4	63
Alexandrina Council	9	7	11
Berri Barmera Council	25	6	19
Coorong District Council	74	14	1
District Council of Loxton Waikerie	103	15	24
Mid Murray Council	40	11	9
Mount Barker District Council	14	11	
Rural City of Murray Bridge	75	34	4
Renmark Paringa Council	2	8	14
City of Playford		10	
Port Adelaide Enfield			19
City of Salisbury		37	13
Southern Mallee District Council			62
City of Tea Tree Gully		8	18

Table 3 details the mean April trap abundance data for *Culex annulirostris* from local council mosquito traps for three seasons (where applicable). The available data shows increased mean *Culex annulirostris* abundance in three council areas compared to the 2022-23 season and decreased mean abundance across five councils compared to the 2021-22 season.

**Table 3: *Culex annulirostris* mean trap abundance data by local council area April 2024 three-year comparison.**

Council	2022	2023	2024
Adelaide Plains Council		0	0
Alexandrina Council	0	0	0.25
Berri Barmera Council	3.3	0.17	1
Coorong District Council	0	0	0
District Council of Loxton Waikerie	1	0.64	0.14
Mid Murray Council	0.8	0	0
Mount Barker District Council	0	0	
Rural City of Murray Bridge	0.4	1	0
Renmark Paringa Council	0.6	0.17	0.56
City of Playford		0.07	
Port Adelaide Enfield			0
City of Salisbury		0	0
Southern Mallee District Council			0
City of Tea Tree Gully		0	0

### Arbovirus isolations from trapped mosquitos (whole trap grinds)

As detailed in table 4, there were no arbovirus detections from qPCR testing of trapped mosquitos during April.

**Table 4: Arbovirus isolations from whole trap grinds April 2024.**

Arbovirus	JEV	MVEV	RRV	BFV	WNV/KUN
Detections	0	0	0	0	0

### South Australian sentinel surveillance program

Ten sentinel chicken flocks established in high-risk locations are bled throughout the mosquito season. The blood is tested for JEV, MVEV and WNV/KUN antibodies, which if present indicates that the chicken has been bitten by a mosquito carrying one of these viruses. The sentinel chicken flock bleed frequency during the 2023-24 season was every three weeks. Bleeds commenced on 30 October 2023 and ceased on 12 April 2024.

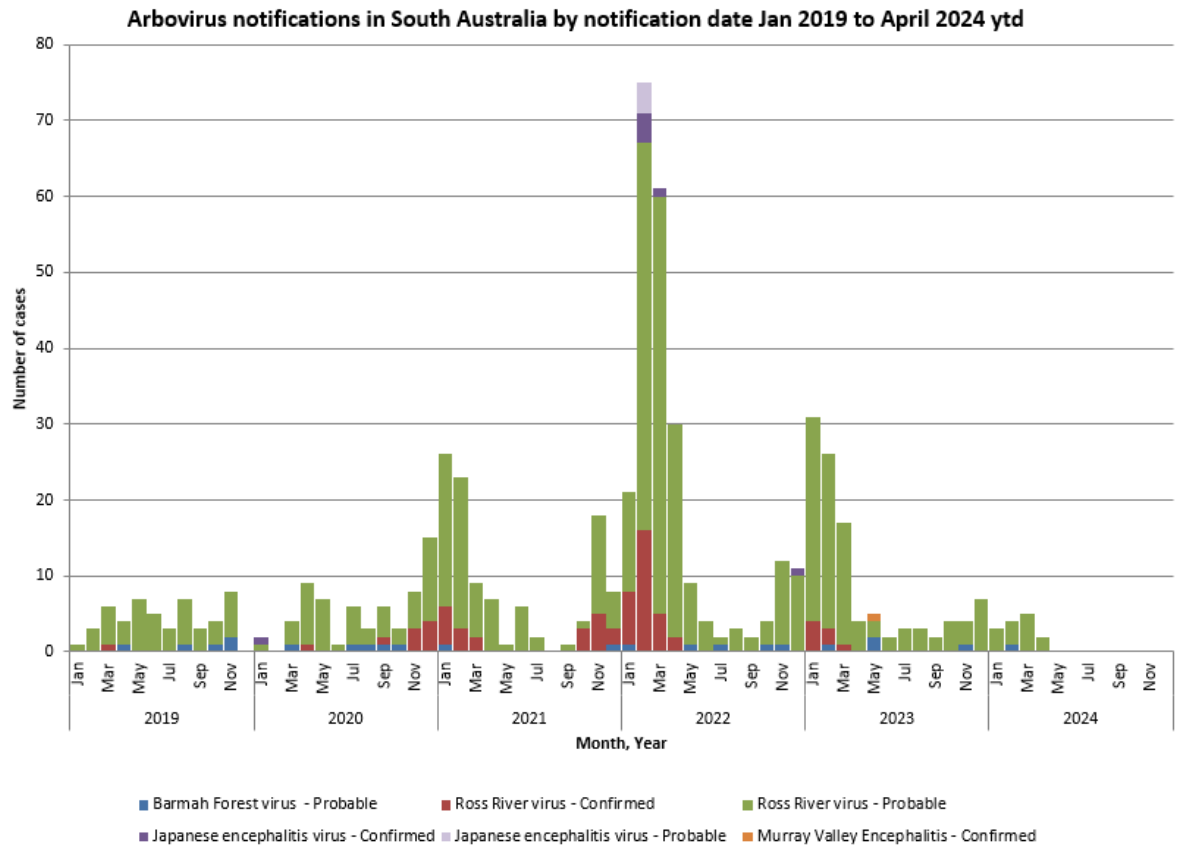
Table 5 details positive arbovirus detections from sentinel chicken flock bleeds for the 2023-24 season to date. Blood samples collected from the Swan Reach flock on 17 January 2024 returned a positive detection for WNV/KUN in one chicken. There were no new positive arbovirus detections from sentinel chicken flock bleeds during April.

**Table 5: Positive detections of arbovirus in sentinel chickens for the 2023-24 season to date.**

Flavivirus	JEV	MVEV	WNV/KUN
Season to date	0	0	1

## Arbovirus notification data

All confirmed and probable arbovirus infections detected in humans in SA are notifiable under the *South Australian Public Health Act 2011*. The two most common locally acquired arbovirus infections notified in SA are infections with RRV and BFV. Figure 1 details arbovirus notification data 2019-2024 by month.



**Figure 1: Arbovirus in South Australia by notification month – 01 January 2019 to 31 April 2024.**

Source: Communicable Disease Control Branch, SA Health.

## Further information

For further information regarding mosquito borne disease see the SA Health website [here](#).

For mosquito management resources and information for environmental health officers see the SA Health website [here](#).

## For more information

Health Protection Programs  
Health Protection and Regulation  
Department for Health and Wellbeing  
PO Box 6  
RUNDLE MALL SA 5000  
Email: [HealthProtectionPrograms@sa.gov.au](mailto:HealthProtectionPrograms@sa.gov.au)  
Telephone: 08 8226 7100  
[www.sahealth.sa.gov.au](http://www.sahealth.sa.gov.au)



<https://creativecommons.org/licenses>



Government  
of South Australia  
SA Health