

# 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

Rainfall in January was above to very much above average across most of South Australia. For South Australia as a whole, rainfall was 44% above average (based on 1961–1990). Numerous sites had their highest January daily rainfall on record. Multiple some sites had their highest total January rainfall on record or their highest total January rainfall for at least 20 years.

Mean maximum temperatures in January were very much above average in the northern pastoral districts of South Australia but were close to average in the southern agricultural districts. South Australia's mean maximum temperature was 2.24 °C above average (based on 1961–1990), the highest in January since 2019.

Mean minimum temperatures in January were above to very much above average across most of South Australia away from some southern central areas. Minimum temperatures were particularly warm in the state's north. South Australia's mean minimum temperature was 2.37 °C above average (based on 1961–1990), the equal-ninth highest on record (since 1910) and highest since 2019.

For February to April, below average rainfall is likely (60 to 80% chance) for most of northern Australia, extending into western WA, SA, and western and eastern parts of NSW. There is no consistent wet or dry signal for much of south-eastern Australia. For February to April, above median maximum temperatures are likely to very likely (60% to greater than 80% chance) for almost all of Australia, excluding southern SA and eastern Victoria. For February, above median minimum temperatures are likely to very likely (60% to greater than 80% chance) for large parts of Australia, excluding western and southern WA, southern SA, and most of Victoria.

El Niño continues in the tropical Pacific Ocean. Model forecasts and observations indicate sea surface temperatures in the central tropical Pacific have peaked and are now declining. Sea surface temperatures in the tropical Pacific are expected to return to neutral El Niño–Southern Oscillation (ENSO) levels in the southern hemisphere autumn 2024. The Indian Ocean Dipole (IOD) has returned to neutral. IOD events typically break down as the monsoon trough shifts south into the southern hemisphere. Due to the strength of the positive IOD in 2023, the event decay has been later than usual.

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

## Northern Adelaide mosquito surveillance program

The 2023-24 northern Adelaide mosquito surveillance program commenced on 6 September 2023. Mosquito surveillance is conducted weekly at six locations. Mean abundance data for January from trap catches shows increased abundance at all trap locations compared previous seasons. See table 1.

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

Trap location	2022	2023	2024
Globe Derby Park Racetrack	70	32	335
Daniel Avenue Wetland	165	118	1025
Swan Alley	1930	2943	6739
TI Quarantine Station	811	493	5167
TI Power Station	149	318	636
Mawson Lakes	48	227	376

### 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 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 January trap abundance data in SA from local council traps for three seasons (where applicable). The available data shows decreased mean trap abundance across seven council areas and an increase in five council areas compared to previous seasons.

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

Council	2022	2023	2024
Adelaide Plains Council		-	37
Alexandrina Council	-	2463	238
Barossa Council			6
Berri Barmera Council	99	178	44
Clare and Gilbert Valleys Council		74	-
Coorong District Council	40	918	440
District Council of Elliston		13	298
District Council of Loxton Waikerie	242	209	49
Mid Murray Council	74	150	119
Mount Barker District Council		13	38
Renmark Paringa Council	25	437	188
Rural City of Murray Bridge	1315	856	190
City of Salisbury	125	35	598
City of Playford		51	151
City of Tea Tree Gully			86
Southern Mallee District Council		22	24

Table 3 details the mean January trap abundance data for *Culex annulirostris* from local council mosquito traps. The available data shows decreased mean *Culex annulirostris* abundance in ten council areas and increased mean *Culex annulirostris* abundance in one council area compared to the 2022-23 mosquito season.

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

Council	2022	2023	2024
Adelaide Plains Council		-	0
Alexandrina Council	-	851.3	78
Barossa Council			0
Berri Barmera Council	0	73.3	5
Clare and Gilbert Valleys council		37	-
Coorong District Council	0	146.6	1.5
District Council of Elliston		0	0
District Council of Loxton Waikerie	111.2	187.3	20.7
Mid Murray Council	24.8	127.3	47.6
Mount Barker District Council	0	2.7	1.29
Renmark Paringa Council	11.2	220.94	57.4
Rural City of Murray Bridge	9.9	347	17.6
City of Playford		8.4	0
City of Salisbury	1	7.7	0
City of Tea Tree Gully			0.5
Southern Mallee District Council		11.8	12.5

### 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 January.

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

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

### South Australian sentinel surveillance program

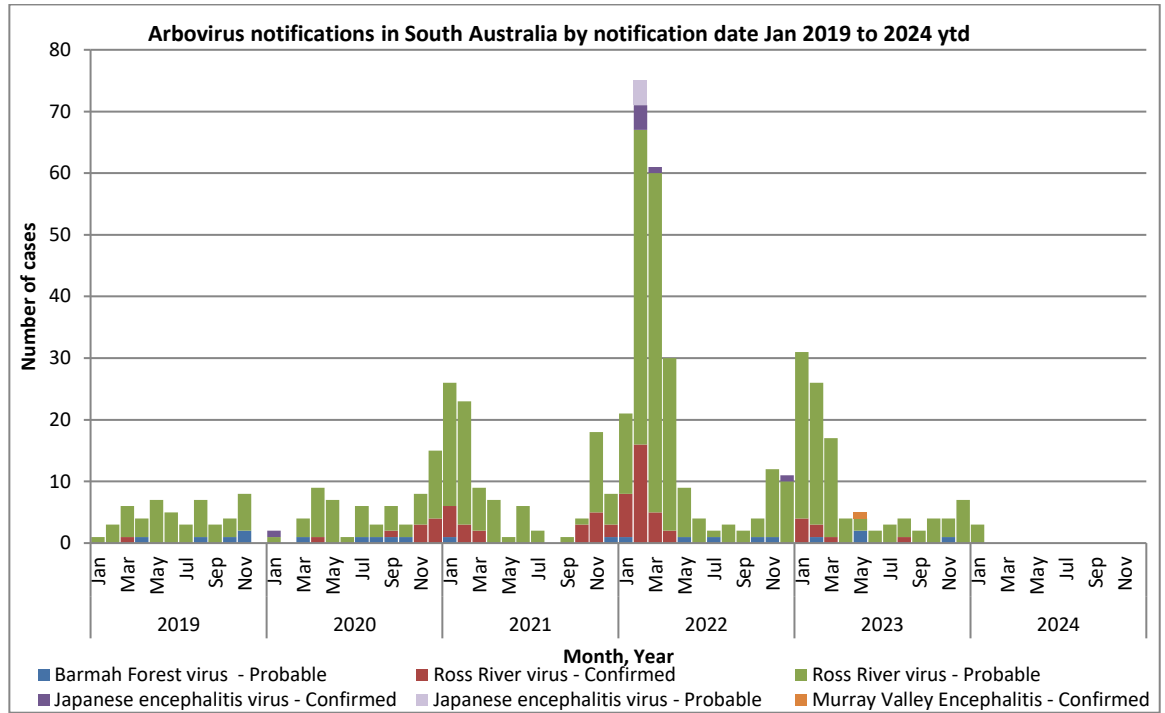
Ten sentinel chicken flocks established in high-risk locations are bled throughout the mosquito season. The blood is tested for JEV, MVEV and WNV/KUN antibodies, which if present indicates that the chicken has been bitten by a mosquito carrying one of these viruses. The sentinel chicken flock bleed frequency is currently every three weeks, and bleeds commenced on 30 October. Blood samples taken on 17 January 2024 returned a positive seroconversion of WNV/KUN antibodies from one chicken in the Swan Reach flock. Repeat confirmatory testing of the affected sentinel chicken was undertaken, results are pending.

**Table 5: Positive detections of arbovirus in sentinel chickens January 2024.**

Flavivirus	JEV	MVEV	WNV/KUN
WNV/KUN	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 January 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

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