

# 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 the main Murray Valley encephalitis virus (MVEV) vector mosquito, *Culex annulirostris*. 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 average for most of South Australia away from the South East districts. Much of the Eyre Peninsula and York Peninsula, plus southern parts of the Pastoral districts, recorded more than 5 times their January average rainfall. For SA, rainfall was 175% above average making it the state's fourth-wettest January on record and wettest since 1984. Most areas in the east, the Riverland, Murrayland, and South East districts recorded below average monthly rainfall totals of less than 25mm.

Daytime temperatures for January were cooler than average in central and western districts, but warmer than average in parts of the east. Night-time temperatures were above to very much above average across most of the state.

February to April rainfall is likely to be above median for parts of eastern and central Australia, while below median rainfall is likely for parts of the central NT, coastal SA and western Tasmania. Maximum temperatures for February to April are likely to be above median for much of the west, south and north, with southern parts of the east coast likely to be below median. Minimum temperatures for February to April are likely to be warmer than median Australia wide.

A mature La Niña event remains active in the tropical Pacific. Climate models indicate the current La Niña event is likely at or near its peak, with a return to neutral likely in early autumn 2022. This pattern is likely to be contributing to the wetter than median outlooks for parts of eastern Australia.

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

### Northern Adelaide mosquito surveillance program trapped mosquito data

The 2021-22 northern Adelaide mosquito surveillance program commenced on 2 September 2021. Mosquito surveillance is conducted weekly at six locations. Mean abundance data from trap catches shows increased abundance at four northern Adelaide trap locations during January compared to the previous two seasons. See table 1.

**Table 1:** Northern Adelaide mosquito surveillance program trapping mean trap abundance data January 2022 three-year comparison.

Trap location	2020	2021	2022
Globe Derby Park Racetrack	45	19	70
Daniel Avenue Wetland	19	26	165
Swan Alley	421	1238	1930
TI Quarantine Station	1017	723	811
TI Power Station	102	253	149
Mawson Lakes	69	40	148

## Local council mosquito surveillance trapped mosquito data

All seven South Australian councils along the River Murray undertake monthly mosquito trapping. Each batch of mosquitoes from all council traps were processed according to trap location, counted, identified to species level, then ground and screened for MVEV, Ross River virus (RRV), Barmah Forest virus (BFV) and West Nile virus/Kunjin virus (WNV/KUNV).

Table 2 details the mean January trap abundance data in SA from local council mosquito traps for three seasons. Data for two River Murray council areas are not included in the January 2022 report due to staffing issues and specimen degradation due to shipping delays.

The available data shows increased mean trap abundance in two River Murray council areas compared to the previous two seasons and decreased mean trap abundance compared to the 2020-21 seasons in three River Murray council areas.

**Table 2:** Local council mosquito surveillance trapping mean abundance data January 2022 three-year comparison.

Council	2020	2021	2022
Alexandrina Council	36	645	-
Berri Barmera Council	-	3	99
Coorong District Council	5	76	40
District Council of Loxton Waikerie	13	48	242
Mid Murray Council	43	101	74
Renmark Paringa Council	-	46	25
Rural City of Murray Bridge	30	212	1315
Mount Barker District Council	-	-	-

Table 3 details the mean January trap abundance data for *Culex annulirostris* from local council mosquito traps for three seasons. Abundance data for *Culex annulirostris* from four River Murray council areas could not be included due to staffing issues and specimen degradation due to shipping delays. The available data shows increased *Culex annulirostris* abundance at two River Murray council areas compared to the previous two seasons. The data for two River Murray council areas shows decreased abundance compared to the 2020-21 season.

**Table 3:** *Culex annulirostris* mean trap abundance data by council January 2022 three-year comparison.

Council	2020	2021	2022
Alexandrina Council	-	-	-
Berri Barmera Council	-	1.5	-
Coorong District Council	-	-	-
District Council of Loxton Waikerie	3.4	30.3	111.2
Mid Murray Council	3.2	26.8	24.75
Renmark Paringa Council	-	37	11.2
Rural City of Murray Bridge	0.4	4.3	9.86
Mount Barker District Council	-	-	-

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

Table 4 details the arbovirus isolations from River Murray mosquito traps during January 2022. Trap catches from four River Murray council areas could not be analysed for arboviruses due to specimen degradation caused by shipping delays. Ross River virus was detected in one whole trap grind from Paisley in the District Council of Loxton Waikerie.

**Table 4:** Arbovirus isolations from whole trap grinds January 2022.

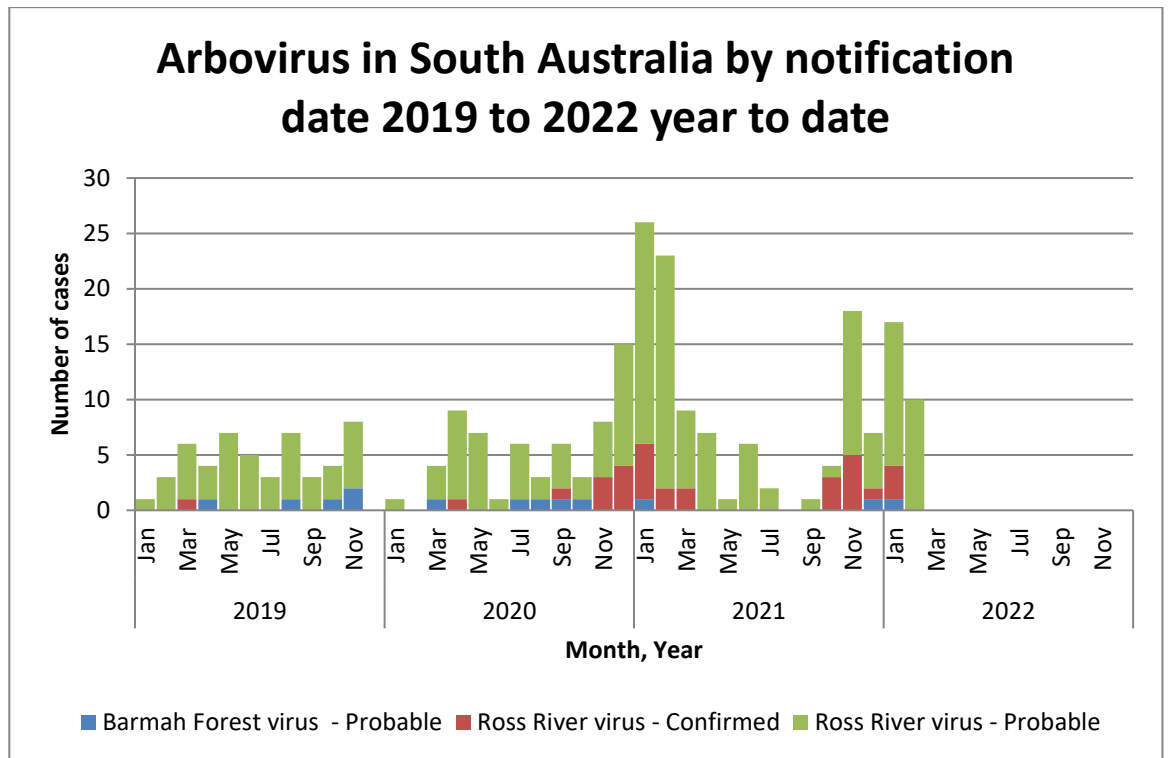
Arbovirus	RRV	BFV	MVEV	KUNV
Detections	1	0	0	0

### South Australian sentinel surveillance program

Chicken flocks in high-risk locations along the River Murray are bled throughout the mosquito season. The blood is tested for MVEV and WNV/KUNV antibodies, which if present indicates that the chicken has been bitten by a mosquito carrying one of these viruses. Sentinel chicken flock bleeds for the season commenced in October. The current bleed frequency is monthly although this may increase if deemed necessary. Two of the six sentinel chicken flocks have experienced chicken losses due to heat. There were no arbovirus detections during January 2022.

## 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 2019-2022 by month.



**Figure 1:** Arbovirus in South Australia by notification month – 01 January 2019 to 03 February 2022

Source: Communicable Disease Control Branch, SA Health.

## Further information

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

For further information on mosquito species found in Australia, including species detailed in this report, please visit <https://medent.usyd.edu.au/photos/mosquitoesofaustralia.htm>.

## For more information

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