



Government of **Western Australia**  
Department of **Health**

# Medical Entomology Quarterly Report

## Wheatbelt Health Region: Apr – Jun 2022



# Ross River virus disease case data summary

## Wheatbelt Health Region: Apr – Jun 2022



Data reflected in this summary of mosquito-borne disease is taken from the Western Australia Notifiable Infectious Disease Database (WANIDD) and includes enhanced surveillance data (ESD) collected by Population Health Units and local governments (only locations with notified cases of disease are shown in tables and figures). Data current as at 22 August 2022.

### Ross River virus (RRV)

#### Wheatbelt Health Region

1 RRV case was notified by lab only in Williams in April. Follow-up data is available for this case.

For the region, the number of cases was **significantly below the long term mean** for all months this quarter.

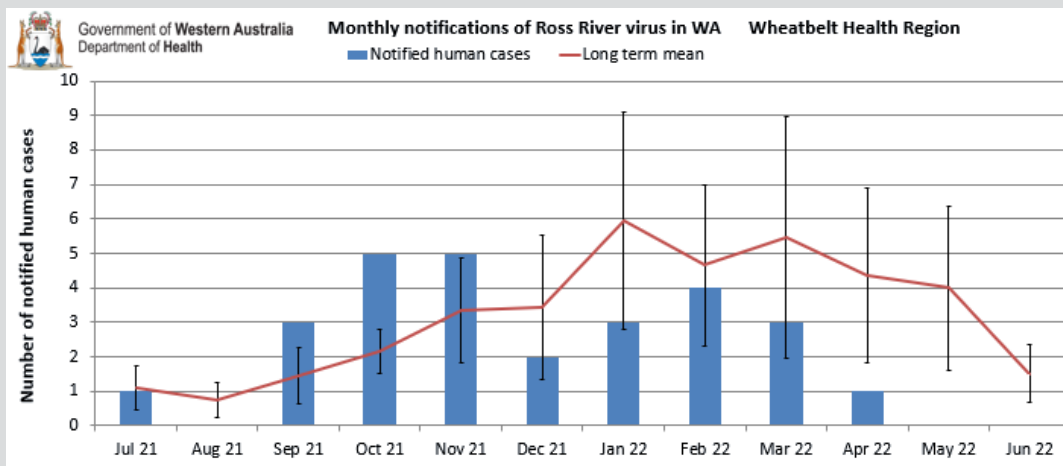
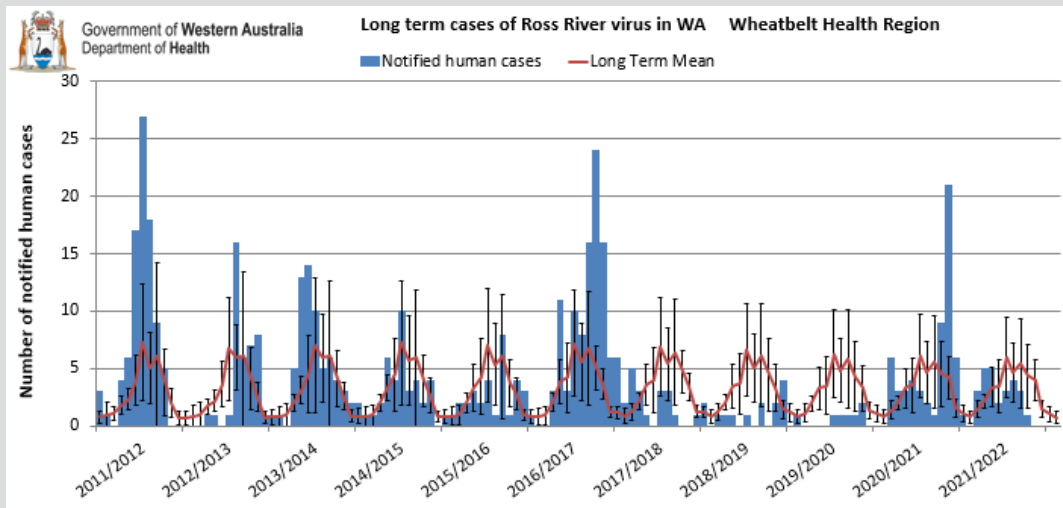
| RRV 2022 Wheatbelt | Apr      | May | Jun | Total    |
|--------------------|----------|-----|-----|----------|
| Wheatbelt          | 1        |     |     | 1        |
| Williams (S)       | 1        |     |     | 1        |
| WILLIAMS           | 1        |     |     | 1        |
| <b>Total</b>       | <b>1</b> |     |     | <b>1</b> |

Doctor Notification Rate: 0%\*

Follow-up Response Rate : 100%\*\*

\*calculated as number of Dr notified cases divided by number of lab notified cases

\*\*calculated by number of follow up surveys (ESD) received divided by number of Dr notified cases. Follow-up can only be requested for Dr notified cases.



# Barmah Forest virus disease case data summary

## Wheatbelt Health Region and State summary: Apr – Jun 2022

Data reflected in this summary of mosquito-borne disease is taken from the Western Australia Notifiable Infectious Disease Database (WANIDD) and includes enhanced surveillance data (ESD) collected by Population Health Units and local governments (only locations with notified cases of disease are shown in tables and figures). Data current as at 22 August 2022.

### Barmah Forest virus (BFV)

#### Western Australia

4 BFV cases were notified in Western Australia this quarter, including 2 notified by doctor. No follow-up data is available for any of these cases.

The number of cases was approximately **at the long term mean** for WA in June, and **below the long term mean** in April and May.

### Barmah Forest virus (BFV)

#### Wheatbelt Health Region

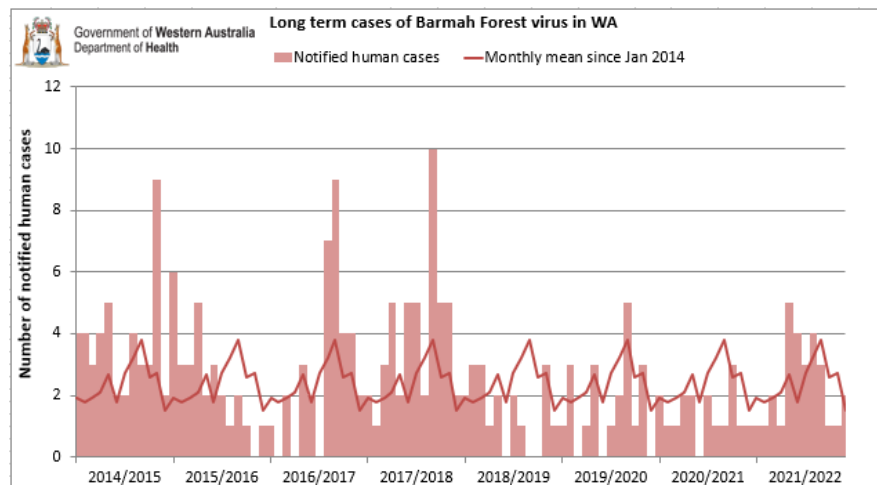
No BFV cases were notified this quarter.

The long term monthly mean is less than one case per month for this region.

| BFV 2022 WA                 | Apr | May | Jun | Total |
|-----------------------------|-----|-----|-----|-------|
| <b>Goldfields-Esperance</b> |     |     | 1   | 1     |
| <b>Coolgardie (S)</b>       |     |     | 1   | 1     |
| COOLGARDIE                  |     |     | 1   | 1     |
| <b>Kimberley</b>            | 1   |     |     | 1     |
| <b>Broome (S)</b>           | 1   |     |     | 1     |
| BROOME                      | 1   |     |     | 1     |
| <b>Metro</b>                |     |     | 1   | 1     |
| <b>Mundaring (S)</b>        |     |     | 1   | 1     |
| MAHOGANY CREEK              |     |     | 1   | 1     |
| <b>SW - Geographe</b>       |     | 1   |     | 1     |
| <b>Busselton (C)</b>        |     | 1   |     | 1     |
| BUSSELTON                   |     | 1   |     | 1     |
| <b>Total</b>                | 1   | 1   | 2   | 4     |

| Serologically confirmed doctor-notified and laboratory reported cases of Barmah Forest virus disease each month in WA, July 2021 - June 2022 # |          |          |          |          |          |          |          |          |          |          |          |          |           |            |              |  |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|------------|--------------|--|
| * Compiled by the Medical Entomology, WA Department of Health *  |          |          |          |          |          |          |          |          |          |          |          |          |           |            |              |  |
| REGION   | Jul      | Aug      | Sep      | Oct      | Nov      | Dec      | Jan      | Feb      | Mar      | Apr      | May      | Jun      | Total     | Crude Rate | Age Std Rate |  |
| KIMBERLEY  | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 1        | 2        | 1        | 0        | 0        | 5         | 13.9       | 19.4         |  |
| PILBARA  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |  |
| GASCOYNE   | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 1         | 10.8       | 15.7         |  |
| MIDWEST  | 0        | 0        | 0        | 0        | 3        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 3         | 5.0        | 5.5          |  |
| WHEATBELT  | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1         | 1.5        | 2.1          |  |
| METRO  | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 2         | 0.1        | 0.1          |  |
| SW - FREEL   | 0        | 0        | 1        | 0        | 0        | 1        | 0        | 1        | 0        | 0        | 0        | 0        | 3         | 1.1        | 0.9          |  |
| SW - LESCHENAU LT  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |  |
| SW - Geographe   | 0        | 0        | 0        | 0        | 1        | 2        | 1        | 0        | 0        | 1        | 0        | 0        | 5         | 8.5        | 6.8          |  |
| SW - ELSEWHERE   | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 1        | 1        | 0        | 0        | 0        | 2         | 4.1        | 4.6          |  |
| SOUTH WEST (Total)   | 0        | 0        | 1        | 0        | 1        | 3        | 1        | 2        | 1        | 0        | 1        | 0        | 10        | 2.2        |              |  |
| GREAT SOUTHERN   | 0        | 0        | 0        | 0        | 1        | 1        | 1        | 0        | 0        | 0        | 0        | 0        | 3         | 4.9        | 4.4          |  |
| GOLDFIELDS-ESPERANCE   | 0        | 0        | 0        | 1        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 1        | 3         | 5.6        | 6.1          |  |
| WA UNDETERMINED  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         |            |              |  |
| INTERSTATE   | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         |            |              |  |
| <b>WA TOTAL (does not include interstate)</b>  | <b>1</b> | <b>1</b> | <b>2</b> | <b>1</b> | <b>5</b> | <b>4</b> | <b>3</b> | <b>4</b> | <b>3</b> | <b>1</b> | <b>1</b> | <b>2</b> | <b>28</b> |            |              |  |

\* Crude Rate per 100, 000 population. Age Standardised Rate per 100, 000 population compared to Australian Standard Population, to eliminate the effect of differences in population age structures between geographic areas.



# Ross River virus disease case data summary

## Western Australia: Apr- Jun 2022

Data reflected in this summary of mosquito-borne disease is taken from the Western Australia Notifiable Infectious Disease Database (WANIDD) and includes enhanced surveillance data (ESD) collected by Population Health Units and local governments (LGs) (only locations with notified cases of disease are shown in tables and figures). Data current as at 16 August 2022.

### Ross River virus (RRV)

#### Western Australia

43 RRV cases were notified across WA during this quarter.  
27 of these were also notified by doctor.

Follow-up surveys can only be requested for cases that have been notified by doctor. Follow-up data is available for 8 cases.

The number of cases across WA was **significantly below the long term mean** for all months this quarter.

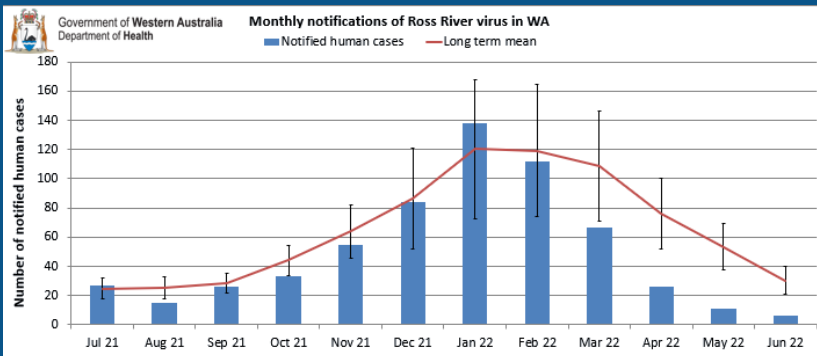
The long term mean is based on the all notified cases since July 2002.

Doctor Notification Rate: 63%\*

Follow-up Response Rate for Dr notified cases : 30%\*\*

\*calculated as number of Dr notified cases divided by number of lab notified cases

\*\*calculated as number of follow up surveys (ESD) received divided by number of Dr notified cases.

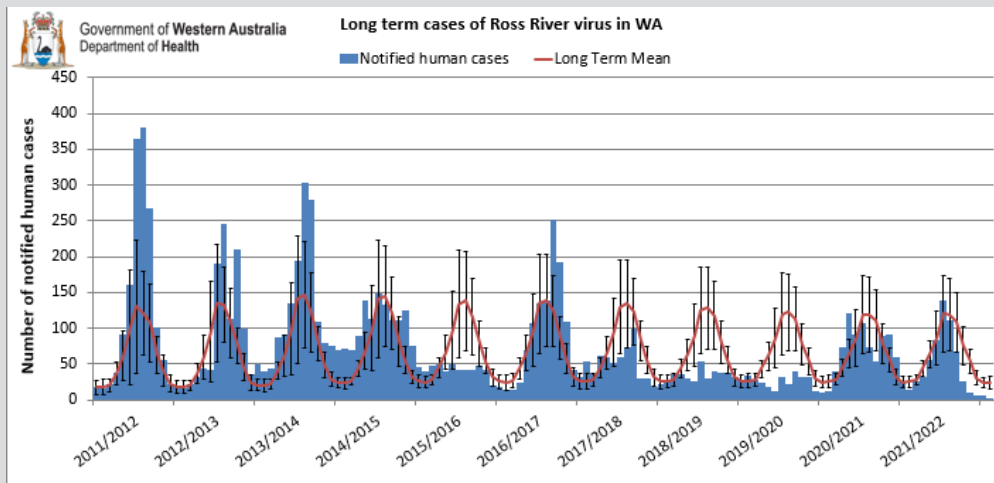


### Serologically confirmed doctor-notified and laboratory reported cases of Ross River virus disease each month in WA, July 2021 - June 2022 #

\* Compiled by the Medical Entomology, WA Department of Health

| REGION  | Jul       | Aug       | Sep       | Oct       | Nov       | Dec       | Jan        | Feb        | Mar       | Apr       | May       | Jun      | Total      | Crude Rate | Age Std Rate |
|---|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|-----------|-----------|-----------|----------|------------|------------|--------------|
| KIMBERLEY                                     | 0         | 3         | 1         | 1         | 1         | 0         | 2          | 6          | 15        | 5         | 2         | 0        | 36         | 99.9       | 101.0        |
| PILBARA                                       | 1         | 0         | 0         | 1         | 2         | 0         | 2          | 4          | 1         | 1         | 0         | 0        | 12         | 19.1       | 15.6         |
| GASCOYNE                                      | 10        | 2         | 1         | 0         | 0         | 0         | 0          | 1          | 0         | 0         | 0         | 0        | 14         | 151.2      | 150.3        |
| MIDWEST                                       | 1         | 1         | 8         | 3         | 4         | 3         | 3          | 2          | 0         | 1         | 0         | 0        | 26         | 43.4       | 39.0         |
| WHEATBELT                                     | 1         | 0         | 2         | 4         | 5         | 2         | 3          | 4          | 3         | 1         | 0         | 0        | 25         | 36.6       | 35.1         |
| METRO   | 3         | 3         | 2         | 7         | 14        | 24        | 55         | 72         | 26        | 11        | 6         | 3        | 226        | 12.2       | 12.0         |
| SW - FEEL                                     | 1         | 3         | 4         | 12        | 15        | 20        | 31         | 7          | 10        | 3         | 1         | 1        | 108        | 38.2       | 38.8         |
| SW - LESCHENAU                                | 5         | 0         | 1         | 0         | 3         | 10        | 13         | 3          | 4         | 1         | 0         | 1        | 41         | 55.0       | 53.6         |
| SW - Geographe                                | 0         | 0         | 1         | 0         | 2         | 3         | 7          | 5          | 3         | 0         | 1         | 1        | 23         | 39.2       | 38.4         |
| SW - ELSEWHERE                                | 3         | 0         | 1         | 0         | 2         | 5         | 11         | 7          | 2         | 2         | 1         | 0        | 34         | 70.1       | 67.2         |
| SOUTH WEST(Total)                             | 9         | 3         | 7         | 12        | 22        | 38        | 62         | 22         | 19        | 6         | 3         | 3        | 206        | 44.3       |              |
| GREAT SOUTHERN                                | 2         | 1         | 2         | 4         | 5         | 14        | 9          | 1          | 2         | 0         | 0         | 0        | 40         | 65.2       | 63.2         |
| GOLDFIELDS-ESPERANCE                          | 0         | 2         | 3         | 1         | 2         | 3         | 2          | 0          | 1         | 1         | 0         | 0        | 15         | 27.8       | 25.8         |
| WA UNDETERMINED                               | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0         | 0         | 0         | 0        | 0          |            |              |
| INTERSTATE                                    | 2         | 0         | 1         | 1         | 3         | 1         | 0          | 2          | 0         | 0         | 2         | 0        | 12         |            |              |
| <b>WA TOTAL (does not include interstate)</b> | <b>27</b> | <b>15</b> | <b>26</b> | <b>33</b> | <b>55</b> | <b>84</b> | <b>138</b> | <b>112</b> | <b>67</b> | <b>26</b> | <b>11</b> | <b>6</b> | <b>600</b> |            |              |

\* Crude Rate per 100, 000 population. Age Standardised Rate per 100, 000 population compared to Australian Standard Population, to eliminate the effect of differences in population age structures between geographic areas.



# Climate outlook for Western Australia Sep - Nov 2022

## Increased risk of mosquito borne disease especially in the north of WA in coming months

Murray Valley Encephalitis (MVE) and Kunjin virus activity have been detected in sentinel chicken flocks in the Kimberley region from February through to June this year. One human case of MVE was confirmed with onset in early July from the West Kimberley region, and is now recovered. Media release was issued 1 August 2022 [Murray Valley encephalitis warning for Kimberley region \(health.wa.gov.au\)](https://www.health.wa.gov.au/newsroom/news-releases/murray-valley-encephalitis-warning-for-kimberley-region)

Japanese Encephalitis (JE) virus is closely related to MVE and Kunjin viruses, and has not been detected in WA to date. Recent JE activity has been detected in the NT close to the WA border, with a confirmed human case in the NT in June – now also recovered.

With both **La Niña** and **negative IOD** predicted for coming months, wetter and warmer conditions especially in the north of WA are conducive for increased mosquito breeding. This will also be the third consecutive year having La Niña conditions which has only occurred twice since 1950, in 1973-75 and 1998-2000. These years also coincided with major outbreaks of MVE in 1974 and 2000. In WA, there were 9 MVE cases notified in 2000.

### El Niño–Southern Oscillation (ENSO)

A weather forecast based on interaction between the atmosphere and tropical Pacific Ocean. Conditions can be El Niño, La Niña or neutral:

**El Niño:** Associated with drier conditions, decreased rainfall and tidal activity. Warmer days in south. Late start to northern wet season with less cyclones and less flooding.

**La Niña:** Associated with wetter, cooler days and warmer nights (due to increased cloud cover). Earlier start to the northern wet season with more tropical cyclones. More conducive to mosquito breeding and possible mosquito-borne virus activity.

### Indian Ocean Dipole (IOD)

**Positive IOD:** Brings below average winter-spring rainfall, warmer days in the west, warmer nights in the south west, and cooler nights in the north.

**Negative IOD:** Brings above average winter-spring rainfall, cooler days in the south, and warmer nights in the north with increased chances of flooding.

## Australian BOM Climate Driver Update Winter-Spring Outlook Issued 16 Aug 2022

**Pacific Ocean:** ENSO currently neutral with outlook **La Niña ALERT** (70% chance of La Niña forming) in coming months. La Niña is associated with **above average rainfall especially in the north of WA**, cooler days and nights in the south of WA and **warmer nights in the north of WA**.

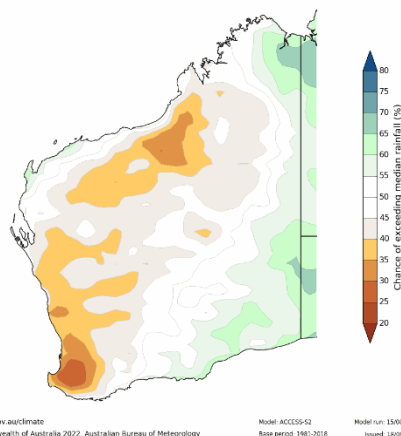
**Indian Ocean:** **Negative Indian Ocean Dipole (IOD)** is currently underway since early June, and likely to persist into late spring. Negative IOD is associated with **wetter than average winter-spring and warmer days and nights in the north of WA**.

**Southern Ocean:** **Southern Annular Mode (SAM)** currently neutral but **likely to become positive for the coming 3 months**. Positive SAM has a drying influence on the south west of Australia.

**When La Niña and Negative IOD coincide, the chance of above average winter-spring rainfall increases.**

## Australian BOM Rainfall Outlook Issued 18 Aug 2022

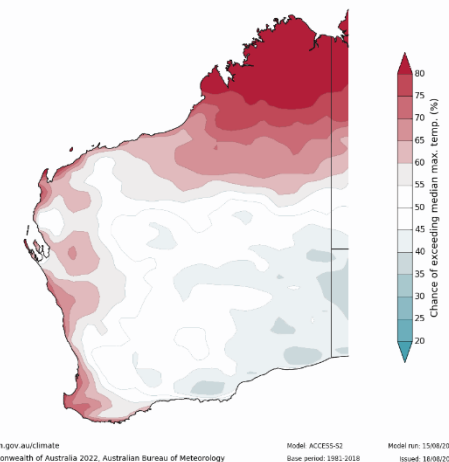
Chance of exceeding the median rainfall for September to November 2022



**Rainfall** is likely to be below median for parts of WA along the west coast and north between Sept to Nov, although large parts of north west to central WA have increased chance of unusually high rainfall for September.

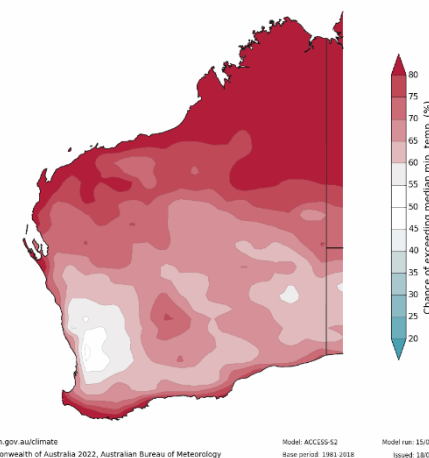
## Australian BOM Temperature Outlook Issued 18 Aug 2022

Chance of exceeding the median maximum temperature for September to November 2022



**Daytime temperatures** are likely to be warmer than median for the tropics and west coast of WA, and cooler than median for central and south east of WA.

Chance of exceeding the median minimum temperature for September to November 2022



**Night-time temperatures** are very likely to be warmer than median across the majority of WA.