



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

# Medical Entomology Quarterly Report

## North Metropolitan Health Region: Jan – Mar 2022



# Ross River virus disease case data summary

## Western Australia: 2021/2022

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 collected by Population Health Units and local governments (only locations with notified cases of disease are shown in tables and figures).

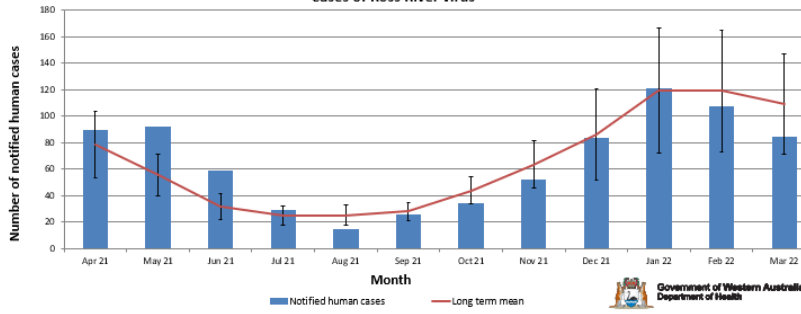
### Ross River virus (RRV)

#### Western Australia

313 RRV cases were notified across WA during this quarter. 239 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 115 cases.

The number of cases across WA was **at the long term mean** for January and **below the long term mean** for February and March 2022.

Cases of Ross River virus



Doctor Notification Rate: 76%\*

Follow-up Response Rate for Dr notified cases : 48%\*\*

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

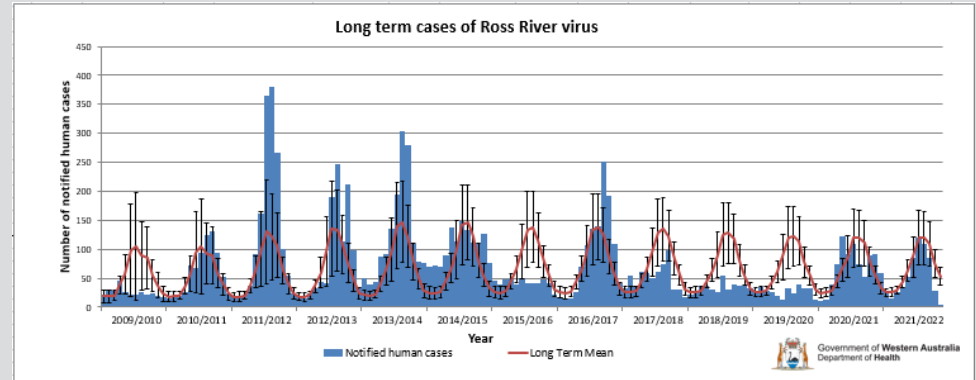
\*\*calculated as number of follow up surveys (ESD) received divided by number of Dr notified cases.

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          | 5          | 14        | 4         | 1        | 0        | 32         | 88.8       | 88.6         |
| PILBARA                                       | 1         | 0         | 0         | 1         | 2         | 0         | 2          | 4          | 1         | 1         | 0        | 0        | 12         | 19.1       | 15.6         |
| GASCOYNE                                      | 11        | 2         | 1         | 0         | 0         | 0         | 1          | 0          | 0         | 0         | 0        | 0        | 15         | 162.0      | 161.8        |
| MIDWEST                                       | 1         | 1         | 8         | 3         | 4         | 3         | 3          | 2          | 0         | 1         | 0        | 0        | 26         | 43.4       | 39.0         |
| WHEATBELT                                     | 1         | 0         | 2         | 4         | 5         | 3         | 3          | 3          | 2         | 1         | 0        | 0        | 24         | 35.1       | 35.1         |
| METRO   | 3         | 3         | 2         | 7         | 11        | 24        | 46         | 70         | 45        | 13        | 1        | 0        | 225        | 12.2       | 12.0         |
| SW - PEEL                                     | 1         | 3         | 4         | 12        | 15        | 19        | 27         | 6          | 11        | 3         | 1        | 0        | 102        | 36.0       | 36.5         |
| SW - LESCHENAULT                              | 5         | 0         | 1         | 0         | 3         | 10        | 13         | 3          | 4         | 1         | 0        | 0        | 40         | 53.7       | 52.5         |
| SW - Geographe                                | 0         | 0         | 1         | 0         | 2         | 3         | 6          | 5          | 3         | 0         | 1        | 0        | 21         | 35.8       | 36.0         |
| SW - ELSEMERE                                 | 3         | 0         | 1         | 0         | 2         | 5         | 9          | 5          | 2         | 2         | 0        | 0        | 29         | 59.8       | 55.7         |
| SOUTH WEST (Total)                            | 9         | 3         | 7         | 12        | 22        | 37        | 55         | 19         | 20        | 6         | 2        | 0        | 192        | 41.3       |              |
| GREAT SOUTHERN                                | 2         | 1         | 2         | 4         | 4         | 14        | 8          | 3          | 2         | 1         | 0        | 0        | 41         | 66.8       | 64.7         |
| 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          | 1          | 0         | 0         | 0        | 0        | 9          |            |              |
| <b>WA TOTAL (does not include interstate)</b> | <b>28</b> | <b>15</b> | <b>26</b> | <b>33</b> | <b>51</b> | <b>84</b> | <b>121</b> | <b>107</b> | <b>85</b> | <b>28</b> | <b>4</b> | <b>0</b> | <b>582</b> |            |              |

Long term cases of Ross River virus



# Ross River virus disease case data summary

## North Metropolitan Health Region: Jan – Mar 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 collected by Population Health Units and local governments (only locations with notified cases of disease are shown in tables and figures).

| RRV 2022             | Jan      | Feb       | Mar      | Total     |
|----------------------|----------|-----------|----------|-----------|
| <b>Metro</b>         | <b>6</b> | <b>15</b> | <b>6</b> | <b>27</b> |
| <b>Bayswater (C)</b> | <b>1</b> |           |          | <b>1</b>  |
| NORANDA              | 1        |           |          | 1         |
| <b>Cambridge (T)</b> |          | <b>2</b>  |          | <b>2</b>  |
| FLOREAT              |          | 1         |          | 1         |
| WEST                 |          |           |          |           |
| LEEDERVILLE          |          | 1         |          | 1         |
| <b>Joondalup (C)</b> |          | <b>2</b>  | <b>2</b> | <b>4</b>  |
| BELDON               |          | 1         |          | 1         |
| DUNCRAIG             |          |           | 1        | 1         |
| JOONDALUP            |          | 1         |          | 1         |
| KINGSLEY             |          |           | 1        | 1         |
| <b>Nedlands (C)</b>  |          | <b>1</b>  |          | <b>1</b>  |
| MOUNT CLAREMONT      |          | 1         |          | 1         |
| <b>Perth (C)</b>     | <b>1</b> |           |          | <b>1</b>  |
| KINGS PARK           | 1        |           |          | 1         |
| <b>Stirling (C)</b>  | <b>4</b> | <b>5</b>  | <b>1</b> | <b>10</b> |
| BALGA                | 1        | 1         |          | 2         |
| DIANELLA             |          | 1         |          | 1         |
| DOUBLEVIEW           |          | 1         |          | 1         |
| KARRINYUP            | 2        | 2         | 1        | 5         |
| YOKINE               | 1        |           |          | 1         |
| <b>Subiaco (C)</b>   |          | <b>3</b>  |          | <b>3</b>  |
| SUBIACO              |          | 3         |          | 3         |
| <b>Wanneroo (C)</b>  |          | <b>2</b>  | <b>3</b> | <b>5</b>  |
| CLARKSON             |          |           | 1        | 1         |
| EGLINTON             |          | 1         |          | 1         |
| SINAGRA              |          |           | 2        | 2         |
| BANKSIA GROVE        |          | 1         |          | 1         |
| <b>Total</b>         | <b>6</b> | <b>15</b> | <b>6</b> | <b>27</b> |

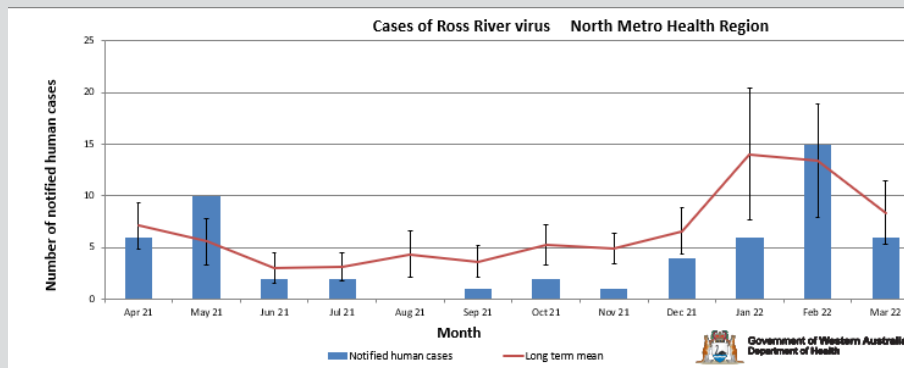
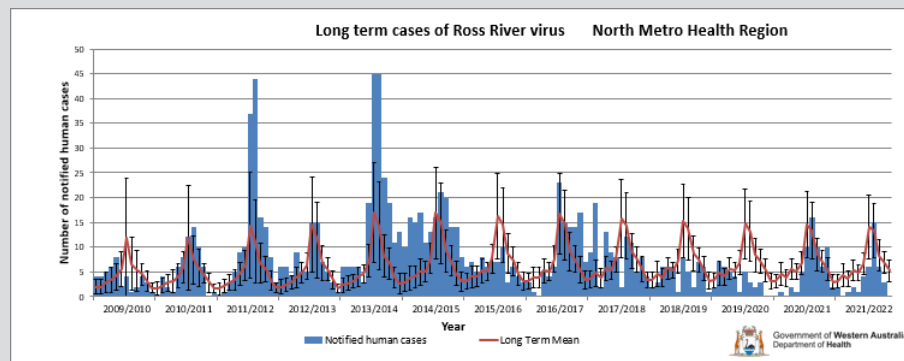
## Ross River virus (RRV)

### North Metropolitan Health Region

27 RRV cases were notified by lab. Of these 19 were also notified by doctor. Follow-up data is available for 8 cases.

The number of cases was **significantly below the long term mean** for January, **above the long term mean** for February and **below the long term mean** for March 2022.

The highest number of cases were notified in Stirling (10) and Wanneroo (5), Joondalup (4) and Subiaco (3). This was **above the long term mean** for Stirling in Jan/Feb, Wanneroo in March, and February for Subiaco.



Doctor Notification Rate: 70%\*

Follow-up Response Rate for Dr notified cases: 42%\*\*

\*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

## North Metropolitan Health Region and State summary: Jan – Mar 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 collected by Population Health Units and local governments (only locations with notified cases of disease are shown in tables and figures).

### Barmah Forest virus (BFV) Western Australia

8 BFV cases were notified in Western Australia this quarter. 3 were notified by doctor. Follow-up data is available for 3 cases from Coral Bay, Denmark and Stratham.

The number of cases was approximately **at the long term mean** for January and February and **below the long term mean** for March 2022.

### Barmah Forest virus (BFV) North Metropolitan Health Region

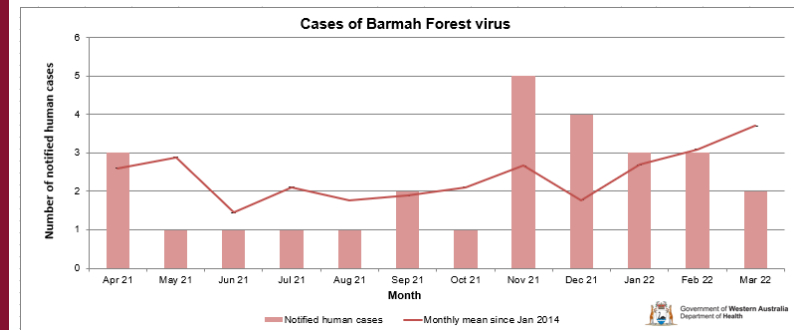
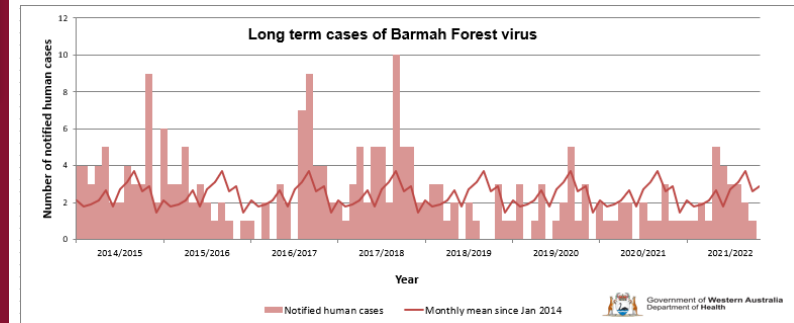
No BFV cases were notified this quarter.

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

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        | 0        | 1         | 0.1        | 0.1          |
| SW - PEEL                                     | 0        | 0        | 1        | 0        | 0        | 1        | 0        | 1        | 0        | 0        | 0        | 0        | 3         | 1.1        | 0.9          |
| SW - LESCHENAU/ALT                            | 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        | 0        | 0        | 0        | 4         | 6.8        | 5.7          |
| SW - ELSEWHERE                                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| SOUTH WEST (Total)                            | 0        | 0        | 1        | 0        | 1        | 3        | 1        | 1        | 0        | 0        | 0        | 0        | 7         | 1.5        | 1.5          |
| 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        | 0        | 1        | 0        | 0        | 0        | 0        | 2         | 3.7        | 4.5          |
| WA UNDETERMINED                               | 0        | 0        | 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         | 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>3</b> | <b>2</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>23</b> |            |              |



| BFV 2022                          | Jan      | Feb      | Mar      | Total    |
|-----------------------------------|----------|----------|----------|----------|
| <b>Gascoyne</b>                   | <b>1</b> |          |          | <b>1</b> |
| <b>Carnarvon (S)</b>              | <b>1</b> |          |          | <b>1</b> |
| <b>CORAL BAY</b>                  | <b>1</b> |          |          | <b>1</b> |
| <b>Goldfields-Esperance</b>       |          | <b>1</b> |          | <b>1</b> |
| <b>Kalgoorlie/Boulder (C)</b>     |          | <b>1</b> |          | <b>1</b> |
| <b>KALGOORLIE</b>                 |          | <b>1</b> |          | <b>1</b> |
| <b>Great Southern</b>             | <b>1</b> |          |          | <b>1</b> |
| <b>Denmark (S)</b>                | <b>1</b> |          |          | <b>1</b> |
| <b>DENMARK</b>                    | <b>1</b> |          |          | <b>1</b> |
| <b>Kimberley</b>                  |          | <b>1</b> | <b>2</b> | <b>3</b> |
| <b>Broome (S)</b>                 |          | <b>1</b> |          | <b>1</b> |
| <b>BROOME</b>                     |          | <b>1</b> |          | <b>1</b> |
| <b>Wyndham-East Kimberley (S)</b> |          |          | <b>2</b> | <b>2</b> |
| <b>KUNUNURRA</b>                  |          |          | <b>2</b> | <b>2</b> |
| <b>SW - Geographe</b>             | <b>1</b> |          |          | <b>1</b> |
| <b>Capel (S)</b>                  | <b>1</b> |          |          | <b>1</b> |
| <b>STRATHAM</b>                   | <b>1</b> |          |          | <b>1</b> |
| <b>SW - Peel</b>                  |          | <b>1</b> |          | <b>1</b> |
| <b>Serpentine-Jarrahdale (S)</b>  |          | <b>1</b> |          | <b>1</b> |
| <b>JARRAHDAL</b>                  |          | <b>1</b> |          | <b>1</b> |
| <b>Total</b>                      | <b>3</b> | <b>3</b> | <b>2</b> | <b>8</b> |



# Climate outlook for Western Australia Jun - Aug 2022

## Predicted impact of climatic conditions on mosquito breeding

La Niña continues in the tropical Pacific, with little change in strength in the past few weeks. Most models predict a return to neutral ENSO in early winter.

The IOD is currently neutral, although a negative IOD is likely to develop in coming months.

**Impact on mosquito breeding:** Warmer wetter days and nights are more conducive to mosquito breeding and possible mosquito-borne virus activity.

Japanese Encephalitis has not been detected in WA. However MVE and Kunjin virus activity has been detected in sentinel chicken flocks in the Kimberley region in Feb, Mar and April this year.

## 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.

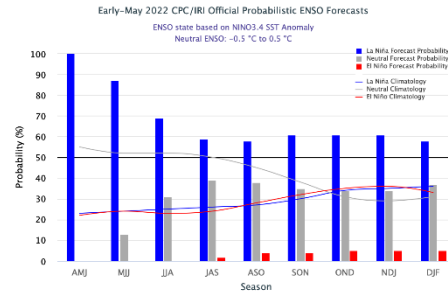
## Indian Ocean Dipole (IOD)

**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.

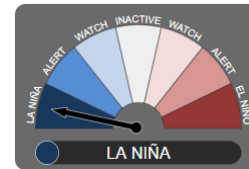
**Negative IOD:** Brings above average winter-spring rainfall, cooler days in the south, and warmer nights in the north with increased chances of flooding.

## International Research Institute for Climate and Society (IRI ENSO) Forecast & BOM

Issued 10 May 2022

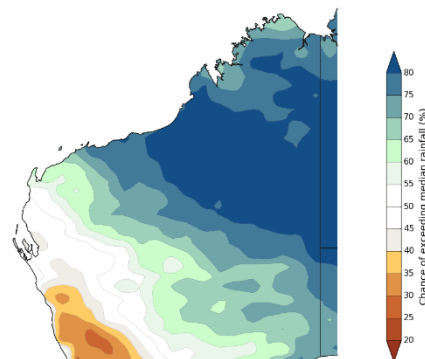


**ENSO Alert Status:**  
La Niña maintains strength and will likely return to neutral early winter



## Australian BOM Rainfall Outlook Issued 12 May 2022

Chance of exceeding the median rainfall for June to August 2022

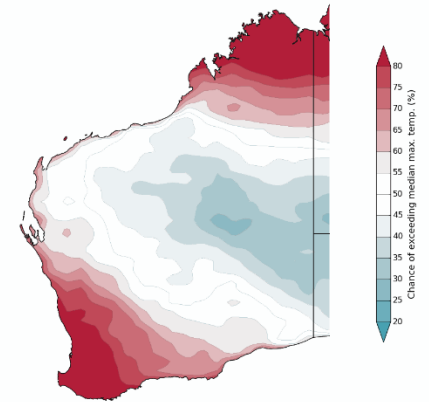


www.bom.gov.au/climate  
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Model: ACCESS-52  
Base period: 1981-2018  
Model run: 09/05/2022  
Issue: 12/05/2022

**Rainfall** is likely to be above median for large parts of the state, and below median for inland south west of WA.

## Australian BOM Temperature Outlook Issued 12 May 2022

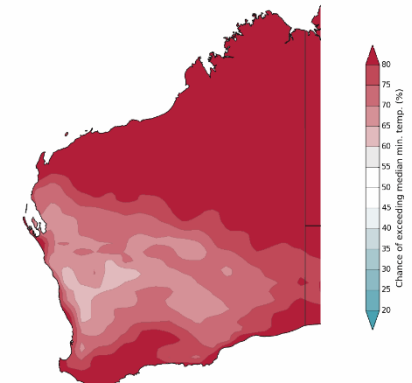
Chance of exceeding the median maximum temperature for June to August 2022



www.bom.gov.au/climate  
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Model: ACCESS-52  
Base period: 1981-2018  
Model run: 09/05/2022  
Issue: 12/05/2022

**Daytime temperatures** are likely to be warmer than median for the tropical north and south west regions, and cooler than median for central WA.

Chance of exceeding the median minimum temperature for June to August 2022



www.bom.gov.au/climate  
© Commonwealth of Australia 2022, Australian Bureau of Meteorology  
Model: ACCESS-52  
Base period: 1981-2018  
Model run: 09/05/2022  
Issue: 12/05/2022

**Night-time temperatures** are very likely to be warmer than median across the whole state.