



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

# Medical Entomology Quarterly Report

## South West Health Region: Oct – Dec 2020



# Ross River virus disease case data summary

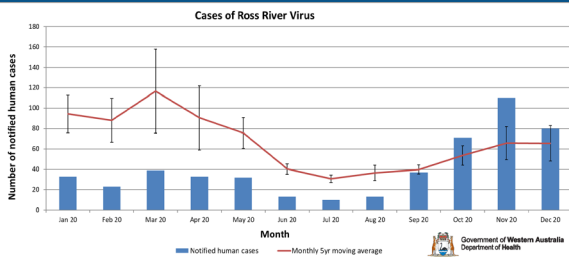
## Western Australia: 2020/21

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

A total of 261 cases of RRV have been reported between 1 October 2020 and 30 December 2020 in Western Australia. Of these 248 cases were notified by Doctor and follow-up data is available for 132 cases.

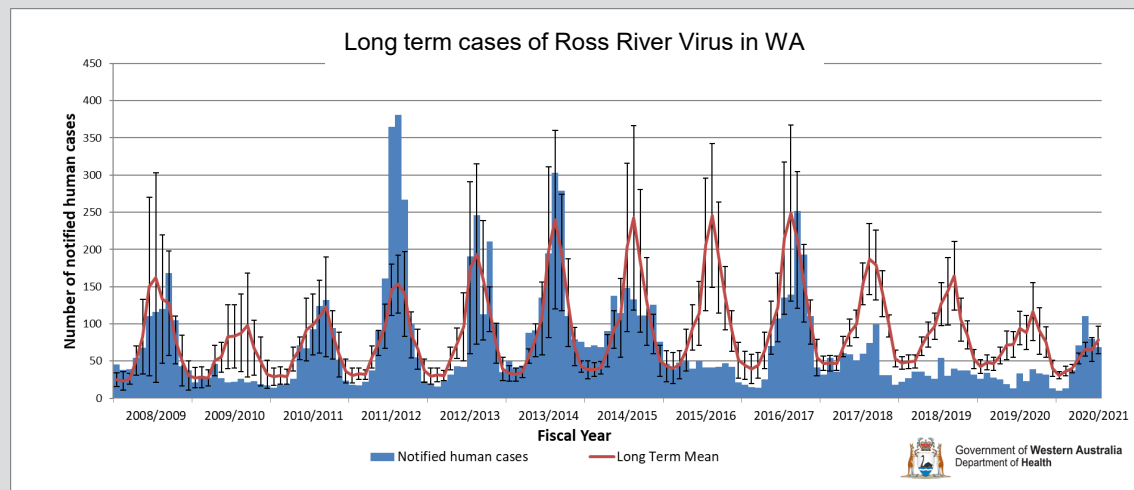
The number of cases was **significantly above** the 5-year moving average for October and November and **above** average for December.



**Serologically confirmed doctor-notified and laboratory reported cases of Ross River virus disease each month in WA, July 2020 - June 2021 #**

*\* 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         | 0         | 2         | 0         | 0          | 0         | 2         | 0         | 0        | 0        | 0        | 0        | 4          | 11.1       | 10.8         |
| PILBARA                                       | 0         | 0         | 0         | 0         | 0          | 2         | 0         | 0         | 0        | 0        | 0        | 0        | 2          | 3.2        | 3.1          |
| GASCOYNE                                      | 0         | 0         | 2         | 1         | 1          | 0         | 0         | 0         | 0        | 0        | 0        | 0        | 4          | 42.4       | 41.2         |
| MIDWEST                                       | 0         | 6         | 9         | 13        | 5          | 2         | 1         | 0         | 0        | 0        | 0        | 0        | 36         | 59.2       | 55.6         |
| WHEATBELT                                     | 0         | 0         | 1         | 1         | 3          | 2         | 1         | 1         | 0        | 0        | 0        | 0        | 9          | 13.1       | 13.2         |
| METRO   | 4         | 1         | 5         | 7         | 9          | 12        | 15        | 1         | 0        | 0        | 0        | 0        | 54         | 3.0        | 2.8          |
| <i>FEEL</i>                                   | 3         | 3         | 8         | 13        | 18         | 11        | 6         | 3         | 0        | 0        | 0        | 0        | 65         | 23.9       | 23.4         |
| <i>LESCHENAU LT</i>                           | 1         | 0         | 4         | 6         | 17         | 8         | 10        | 2         | 0        | 0        | 0        | 0        | 48         | 64.9       | 63.1         |
| <i>GEOGRAPHE</i>                              | 1         | 2         | 6         | 26        | 47         | 30        | 11        | 1         | 0        | 0        | 0        | 0        | 124        | 217.7      | 210.0        |
| <i>ELSEWHERE SW</i>                           | 0         | 0         | 0         | 2         | 4          | 5         | 5         | 0         | 0        | 0        | 0        | 0        | 16         | 33.7       | 33.7         |
| SOUTH WEST                                    | 5         | 5         | 18        | 47        | 86         | 54        | 32        | 6         | 0        | 0        | 0        | 0        | 253        | 56.2       |              |
| GREAT SOUTHERN                                | 1         | 1         | 0         | 1         | 4          | 3         | 14        | 4         | 0        | 0        | 0        | 0        | 28         | 46.0       | 42.3         |
| GOLDFIELDS-ESPERANCE                          | 0         | 0         | 0         | 1         | 2          | 5         | 4         | 0         | 0        | 0        | 0        | 0        | 12         | 21.8       | 21.7         |
| WA UNDETERMINED                               | 0         | 0         | 0         | 0         | 0          | 0         | 0         | 0         | 0        | 0        | 0        | 0        | 0          |            |              |
| INTERSTATE                                    | 0         | 0         | 0         | 0         | 1          | 0         | 1         | 0         | 0        | 0        | 0        | 0        | 2          |            |              |
| <b>WA TOTAL (does not include interstate)</b> | <b>10</b> | <b>13</b> | <b>37</b> | <b>71</b> | <b>110</b> | <b>80</b> | <b>69</b> | <b>12</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>402</b> |            |              |



# Ross River virus disease case data summary

## South West Health Region: Oct – Dec 2020



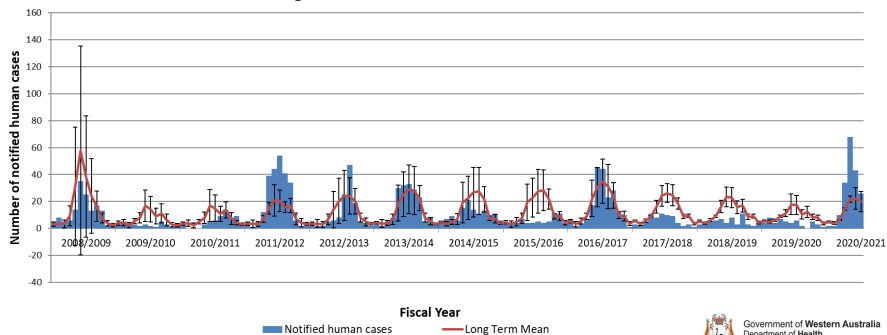
Data reflected in this summary of mosquito-borne disease is taken from the Western Australia Notifiable Infectious Disease Database (WANIDD) and includes enhanced surveillance data collected by Population Health Units and local governments (only locations with notified cases of disease are shown in tables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

### Ross River virus (RRV)

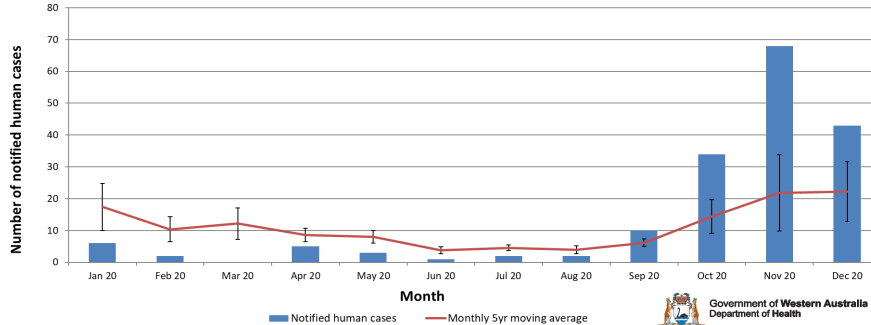
#### South West Health Region

145 RRV cases for the South West Health Region with 141 cases notified by Doctor. Follow-up data is available for 81 cases. The number of cases was **significantly above** the 5-year moving average.

Long Term Cases of Ross River Virus



Cases of Ross River Virus



| RRV 2020                          | Oct       | Nov       | Dec       | Total      |
|-----------------------------------|-----------|-----------|-----------|------------|
| <b>SW - Elsewhere</b>             | <b>2</b>  | <b>4</b>  | <b>5</b>  | <b>11</b>  |
| <b>Augusta-Margaret River (S)</b> | <b>1</b>  | <b>2</b>  | <b>3</b>  | <b>6</b>   |
| AUGUSTA                           |           | 1         | 1         | 2          |
| COWARAMUP                         |           |           | 1         | 1          |
| MARGARET RIVER                    |           | 1         | 1         | 2          |
| PREVELLY                          | 1         |           |           | 1          |
| <b>Donnybrook-Balingup (S)</b>    |           | <b>2</b>  | <b>2</b>  | <b>4</b>   |
| DONNYBROOK                        |           | 1         | 2         | 3          |
| CUNDINUP                          |           | 1         |           | 1          |
| <b>Manjimup (S)</b>               | <b>1</b>  |           |           | <b>1</b>   |
| PEMBERTON                         | 1         |           |           | 1          |
| <b>SW - Geographe</b>             | <b>26</b> | <b>47</b> | <b>30</b> | <b>103</b> |
| <b>Capel (S)</b>                  | <b>21</b> | <b>22</b> | <b>10</b> | <b>53</b>  |
| CAPEL                             | 5         | 7         | 5         | 17         |
| DALYELLUP                         | 8         | 7         | 1         | 16         |
| GELORUP                           | 3         | 6         | 1         | 10         |
| PEPPERMINT GROVE BEACH            | 2         | 1         | 1         | 4          |
| STRATHAM                          | 3         | 1         | 1         | 5          |
| STIRLING ESTATE                   |           |           | 1         | 1          |
| <b>Busselton (C)</b>              | <b>5</b>  | <b>25</b> | <b>20</b> | <b>50</b>  |
| ABBAY                             |           | 1         |           | 1          |
| BOVELL                            |           |           | 1         | 1          |
| BUSSELTON                         | 1         | 12        | 4         | 17         |
| DUNSBOROUGH                       |           | 2         | 2         | 4          |
| GEOGRAPHE                         |           | 1         | 1         | 2          |
| LUDLOW                            |           | 2         | 1         | 3          |
| MARYBROOK                         | 2         |           |           | 2          |
| QUINDALUP                         |           | 2         | 2         | 4          |
| REINSCOURT                        |           | 3         |           | 3          |
| RUABON                            | 1         |           |           | 1          |
| SIESTA PARK                       |           |           | 1         | 1          |
| VASSE                             |           | 1         | 2         | 3          |
| WEST BUSSELTON                    |           |           | 2         | 2          |
| WONNERUP                          | 1         | 1         | 2         | 4          |
| YALYALUP                          |           |           | 1         | 1          |
| YELVERTON                         |           |           | 1         | 1          |
| <b>SW - Leschenault</b>           | <b>6</b>  | <b>17</b> | <b>8</b>  | <b>31</b>  |
| <b>Bunbury (C)</b>                | <b>2</b>  | <b>6</b>  | <b>6</b>  | <b>14</b>  |
| BUNBURY                           |           | 4         | 5         | 9          |
| CAREY PARK                        |           | 1         |           | 1          |
| SOUTH BUNBURY                     | 1         |           |           | 1          |
| USHER                             | 1         | 1         | 1         | 3          |
| <b>Dardanup (S)</b>               | <b>2</b>  | <b>3</b>  |           | <b>5</b>   |
| EATON                             | 2         | 3         |           | 5          |
| <b>Harvey (S)</b>                 | <b>2</b>  | <b>8</b>  | <b>2</b>  | <b>12</b>  |
| AUSTRALIND                        | 1         | 2         | 1         | 4          |
| BINNINGUP                         |           | 1         |           | 1          |
| BRUNSWICK                         |           |           | 1         | 1          |
| LESCHENAULT                       | 1         | 4         |           | 5          |
| MYALUP                            |           | 1         |           | 1          |
| <b>Total</b>                      | <b>34</b> | <b>68</b> | <b>43</b> | <b>145</b> |

# Barmah Forest virus disease case data summary

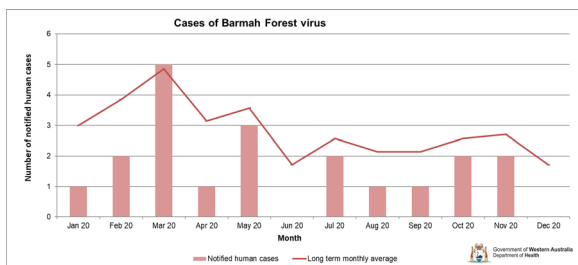
## South West Health Region and State summary: Oct - Dec 2020

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

A total of 4 cases of BFV have been reported between 1 October 2020 and 30 December 2020 in Western Australia. 3 were notified by Doctor and follow-up data is available for 2 cases.

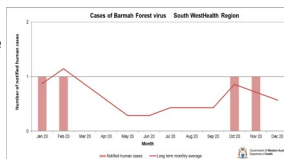
The number of cases was below the 5-year moving average.



### Barmah Forest virus (BFV) South West Health Region

2 BFV cases were notified in the South West Health Region in Gelorup and Myalup between October-December 2020. Both cases were notified by Doctor and have follow-up data.

The 5-year moving average is less than one case per month for this region.

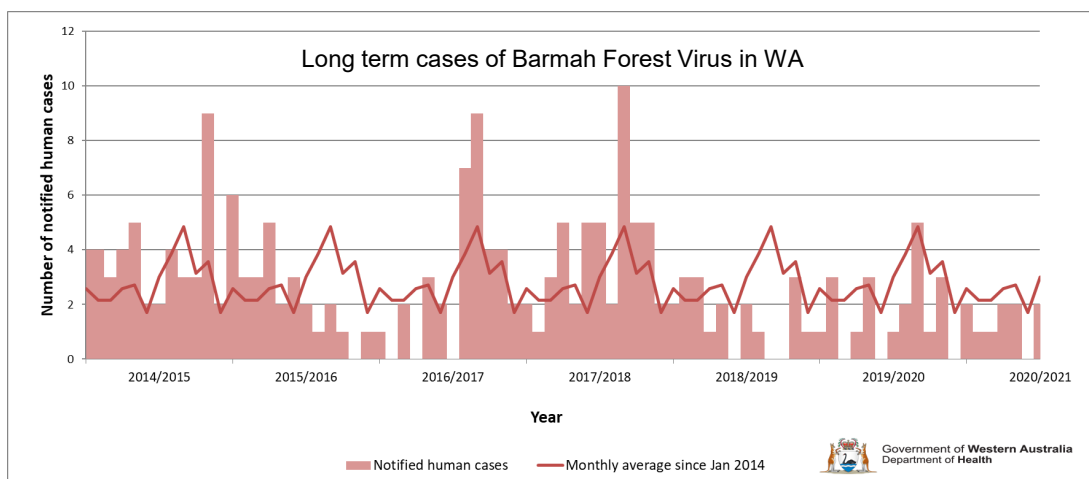


Serologically confirmed doctor-notified and laboratory reported cases of Barmah Forest virus disease each month in WA, July 2020 - June 2021 #

\* 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                                     | 2        | 0        | 1        | 1        | 0        | 0        | 2        | 0        | 0        | 0        | 0        | 0        | 6         | 16.7       | 15.1         |
| PILBARA                                       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| GASCOYNE                                      | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1         | 10.6       | 12.5         |
| MIDWEST                                       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| WHEATBELT                                     | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| METRO   | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| FEEL  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| LESCHENAULT                                   | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1         | 1.4        | 1.7          |
| GEOGRAPHIE                                    | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1         | 1.8        | 1.9          |
| ELSEWHERE SW                                  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| SOUTH WEST                                    | 0        | 0        | 0        | 1        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 2         | 0.4        | 0.0          |
| GREAT SOUTHERN                                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0.0        | 0.0          |
| GOLDFIELDS-ESPERANCE                          | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1         | 1.8        | 1.6          |
| WA UNDETERMINED                               | 0        | 0        | 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        | 0.0          |
| <b>WA TOTAL (does not include interstate)</b> | <b>2</b> | <b>1</b> | <b>1</b> | <b>2</b> | <b>2</b> | <b>0</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>10</b> |            |              |

Long term cases of Barmah Forest Virus in WA



# Climate outlook for Western Australia

## Feb-Apr 2021

### Predicted impact of climatic conditions on mosquito breeding

La Niña likely past peak but influence continues into early autumn.

The IOD is currently neutral, having less influence on WA's climate and most models suggest it will remain neutral through early autumn.

**Impact on mosquito breeding:** Above average rainfall conditions and warmer nights (across most of the state) are conducive to mosquito breeding and possible mosquito-borne virus activity. Surveillance of mosquitoes has also detected increased virus prevalence from the metropolitan area and across the SW. No virus activity has been detected in the northern sentinel chicken flocks during 2020/21.

### 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.

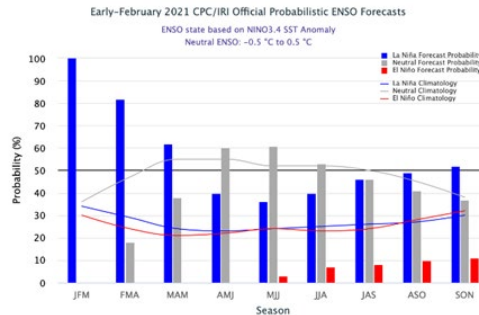
### Indian Ocean Dipole (IOD)

**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.

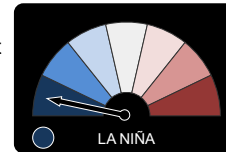
**Negative IOD:** Brings above average winter-spring rainfall, cooler days in the south, and warmer nights in the north with increased chances of flooding.

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

Issued 11 February 2021



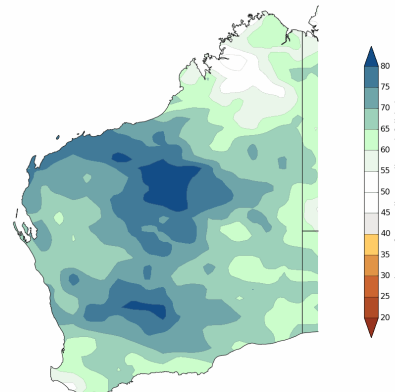
**ENSO Alert Status:** likely past peak but influence continues into early autumn.



### Australian BOM Rainfall Outlook

Issued 04 February 2021

Chance of exceeding the median rainfall for February to April 2021

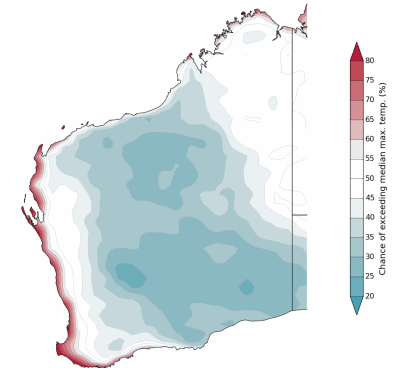


**Rainfall** is likely to be above average across most of the state.

### Australian BOM Temperature Outlook

Issued 04 February 2021

Chance of exceeding the median maximum temperature for February to April 2021

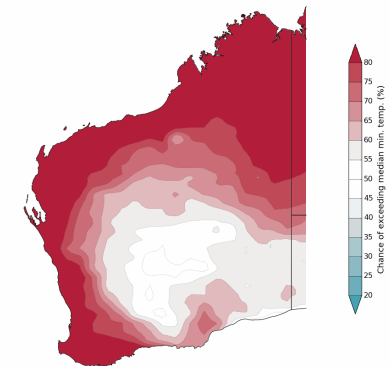


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Model: ACCESS-S1  
Base period: 1990-2012  
Model run: 01/02/2021  
Issued: 04/02/2021

**Daytime temperatures** are likely to be warmer than average for the coastal areas of WA south from Onslow and at or below average for the rest of the state.

Chance of exceeding the median minimum temperature for February to April 2021



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Model: ACCESS-S1  
Base period: 1990-2012  
Model run: 01/02/2021  
Issued: 04/02/2021

**Night-time temperatures** are very likely to be warmer than average across most of the state except for the central region.