



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

Medical Entomology Quarterly Report

Kimberley Health Region: Jul - Sep 2022



Ross River virus disease case data summary

Kimberley Health Region: Jul - Sep 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 7 November 2022.

Ross River virus (RRV) Kimberley Health Region

3 RRV cases were notified by lab, including 2 also notified by doctor. Follow-up data is available for the case on the Dampier Peninsula.

For the region, the number of cases was within the normal range of the long term mean for July and August.

For the Shire of Broome, these cases are significantly above the long term mean in July but within the normal range for August.

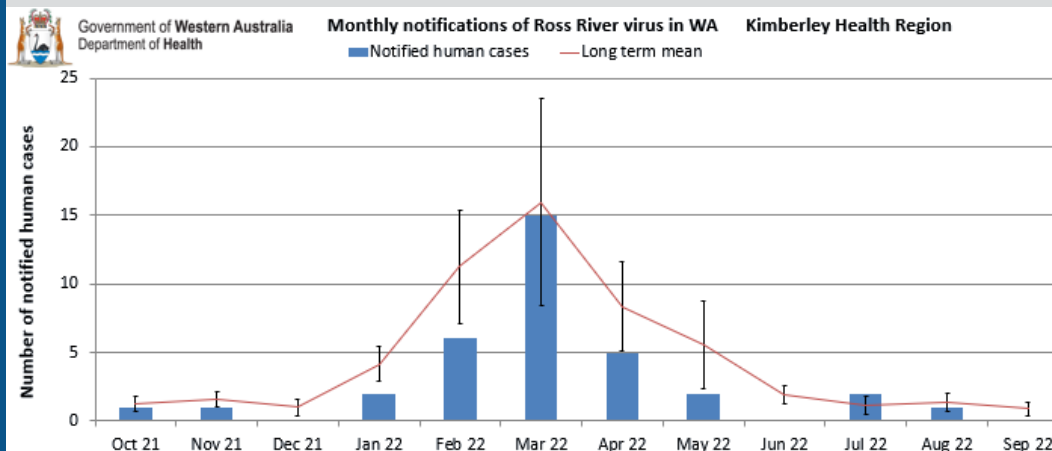
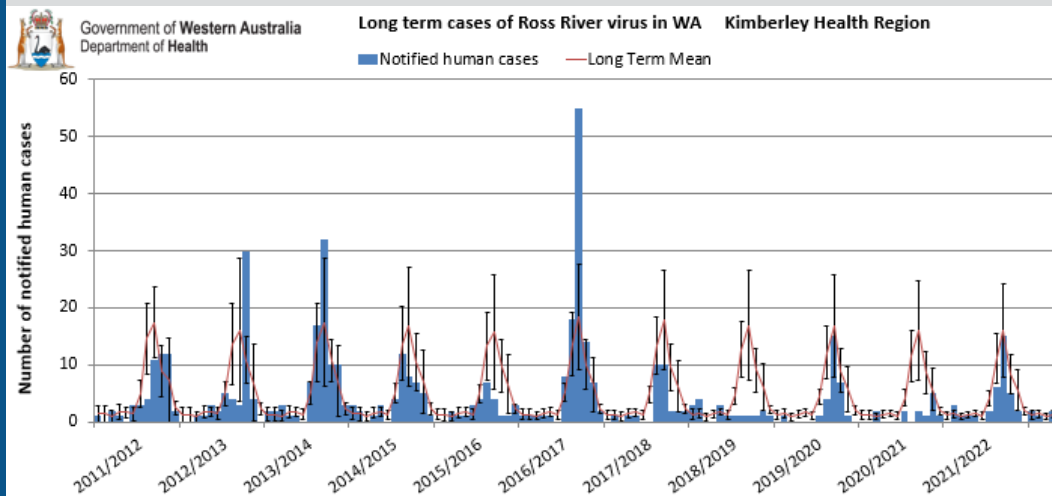
RRV Kimberley 2022	Jul	Aug	Sep	Total
Kimberley	2	1		3
Broome (S)	2	1		3
BROOME	2			2
DAMPIER PENINSULA		1		1
Total	2	1		3

Doctor Notification Rate: 67%*

Follow-up Response Rate for Dr notified cases: 50%**

*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

Kimberley Health Region and State summary: Jul - Sep 2022

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Barmah Forest virus (BFV)

Western Australia

4 BFV cases were notified across WA this quarter, including 3 notified by doctor.

Follow-up data is available for the case in Millbrook only.

The number of cases was above the long term mean for August, but below in July and September.

Barmah Forest virus (BFV)

Kimberley Health Region

No BFV cases were notified this quarter.

The long term monthly mean at most one case per month for this region.

BFV 2022	Jul	Aug	Sep	Total
Great Southern		1		1
Albany (C)		1		1
MILLBROOK		1		1
Pilbara		1		1
Karratha (C)		1		1
BULGARRA		1		1
SW - Peel		1	1	2
Mandurah (C)		1	1	2
FALCON		1		1
GREENFIELDS			1	1
Total		3	1	4

Serologically confirmed doctor-notified and laboratory reported cases of Barmah Forest virus disease each month in WA, July 2022 - June 2023 #

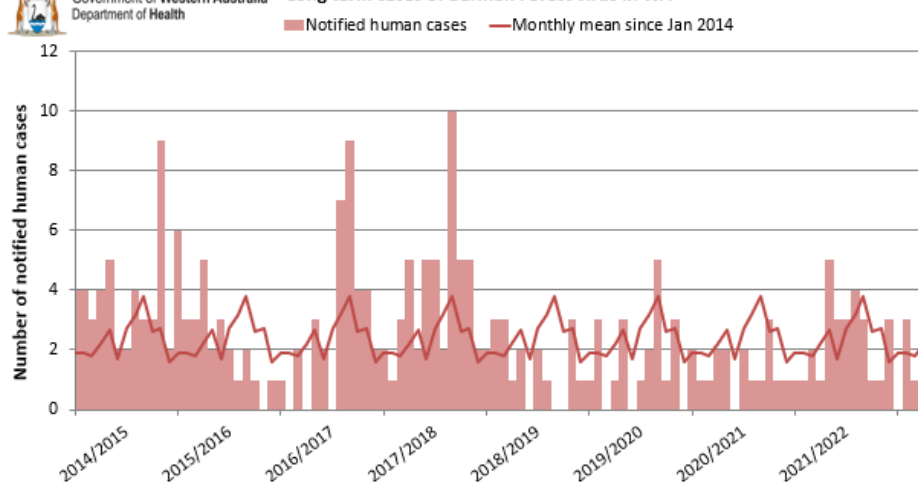
* Compiled by the Medical Entomology, WA Department of Health

REGION	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total	Crude Rate	Age Std Rate
KIMBERLEY	0	0	0	1	0	0	0	0	0	0	0	0	1	2.8	2.7
PILBARA	0	1	0	0	0	0	0	0	0	0	0	0	1	1.6	1.0
GASCOYNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
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
SW - PEEL	0	1	1	2	0	0	0	0	0	0	0	0	4	1.4	1.1
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	0	0	0	0	0	0	0	0	0	0.0	0.0
SW - ELSEWHERE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
SOUTH WEST (Total)	0	1	1	2	0	0	0	0	0	0	0	0	4	0.9	
GREAT SOUTHERN	0	1	0	0	0	0	0	0	0	0	0	0	1	1.6	0.9
GOLDFIELDS-ESPERANCE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
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		
WA TOTAL (does not include interstate)	0	3	1	3	0	0	0	0	0	0	0	0	7		

* 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.



Long term cases of Barmah Forest virus in WA



Ross River virus disease case data summary

Western Australia: Jul - Sep 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 7 November 2022.

Ross River virus (RRV) Western Australia

21 RRV cases were notified across WA, including 13 that were also notified by doctor this quarter. Follow-up data is available for 7 of these cases.

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

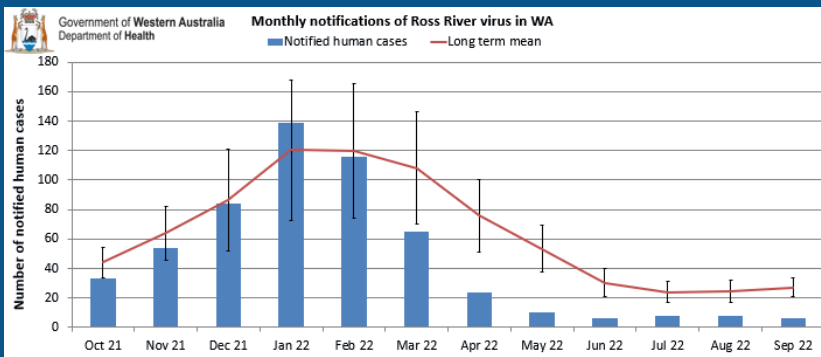
The long term mean is based on all notified RRV cases across WA since July 2002.

Doctor Notification Rate: 62%*

Follow-up Response Rate for Dr notified cases : 54%**

*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.

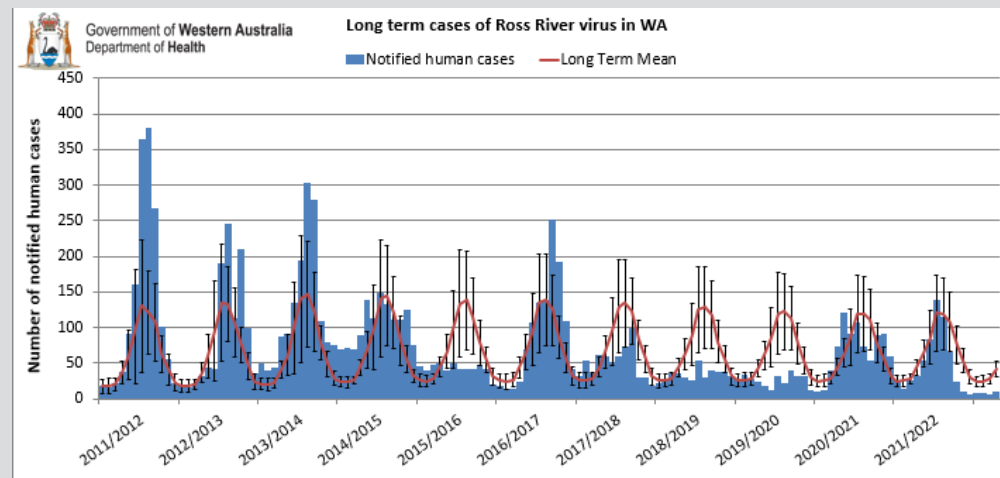


Serologically confirmed doctor-notified and laboratory reported cases of Ross River virus disease each month in WA, July 2022 - June 2023 #

* 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	1	0	2	0	0	0	0	0	0	0	0	5	13.9	16.9
PILBARA	0	1	0	0	0	0	0	0	0	0	0	0	1	1.6	1.4
GASCOYNE	0	2	0	0	0	0	0	0	0	0	0	0	2	21.6	23.9
MIDWEST	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
WHEATBELT	0	0	0	1	0	0	0	0	0	0	0	0	1	1.5	1.4
METRO	2	2	3	4	0	0	0	0	0	0	0	0	11	0.6	0.6
SW - FEEL	2	2	0	1	0	0	0	0	0	0	0	0	5	1.8	1.9
SW - LESCHENAULT	0	0	3	0	0	0	0	0	0	0	0	0	3	4.0	3.1
SW - Geographe	1	0	0	2	0	0	0	0	0	0	0	0	3	5.1	3.4
SW - ELSEWHERE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
SOUTH WEST(Total)	3	2	3	3	0	0	0	0	0	0	0	0	11	2.4	
GREAT SOUTHERN	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
GOLDFIELDS-ESPERANCE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
WA UNDETERMINED	0	0	0	0	0	0	0	0	0	0	0	0	0		
INTERSTATE	1	0	1	0	0	0	0	0	0	0	0	0	2		
WA TOTAL (does not include interstate)	7	8	6	10	0	0	0	0	0	0	0	0	31		

* 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 Nov - Jan 2023

Increased risk of mosquito borne disease in coming months

Murray Valley Encephalitis (MVE) and Kunjin virus activity have been detected in sentinel chicken flocks in the Kimberley region in July this year. Flavivirus activity was also detected in the Pilbara region in August. 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)

Japanese Encephalitis (JE) virus is closely related to MVE and Kunjin viruses, and has not been detected in WA to date. However, JE activity has been detected in the NT close to the WA border, with two confirmed human cases, one being fatal.

Both **La Niña** and **negative IOD** events are currently **underway**, likely to be associated with increased tidal/cyclone activity which may create conditions conducive for increased mosquito breeding and virus activity. This is the third consecutive year having La Nina conditions which has only occurred twice since 1950, in 1973-75 and 1998-2000, which 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 Outlook Issued 8 Nov 2022

Pacific Ocean: A **La Niña** event is under way in the **tropical Pacific**, and predicted to continue till early 2023. La Niña is usually 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**.

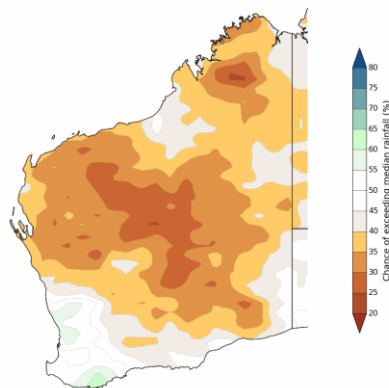
Indian Ocean: A **Negative Indian Ocean Dipole (IOD)** is currently underway and likely to persist until the end of spring. Negative IOD is usually associated with a **wetter than average winter-spring and warmer days and nights in the north of WA**.

Southern Ocean: A **Positive Southern Annular Mode (SAM)** is current and expected to remain positive into early summer. Positive SAM has a drying influence on the south west of Australia.

When La Niña and Negative IOD coincide, the chance of above average summer rainfall increases.

Australian BOM Rainfall Outlook Issued 8 Nov 2022

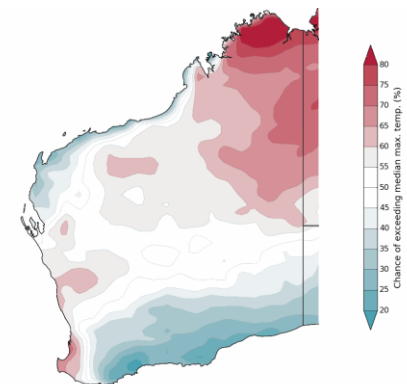
Chance of exceeding the median rainfall
for Nov 2022 to Jan 2023



Rainfall is likely to be below median for large parts of WA. Increased chance of above median rainfall for Great Southern region.

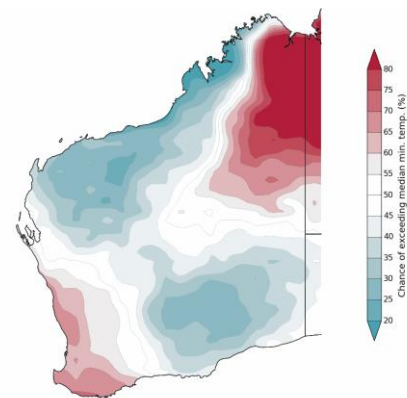
Australian BOM Temperature Outlook Issued 8 Nov 2022

Chance of exceeding the median maximum
temperature for Nov 2022 to Jan 2023



Daytime maximum temperatures are likely to be warmer than median for the north-east and south west of WA, and cooler than median for north west and southern coast of WA.

Chance of exceeding the median minimum
temperature for Nov 2022 to Jan 2023



Night-time minimum temperatures are very likely to be warmer than median for the eastern Kimberley region, likely to be warmer in the south west of WA, and below median along the Kimberley coast, Pilbara and south eastern WA.