



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

Medical Entomology Quarterly Report

Kimberley Region: Jan – Mar 2020



Ross River virus disease case data summary

Kimberley Region: Jan – Mar 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)

Kimberley Health Region

18 RRV cases this quarter for the Kimberley Health region.

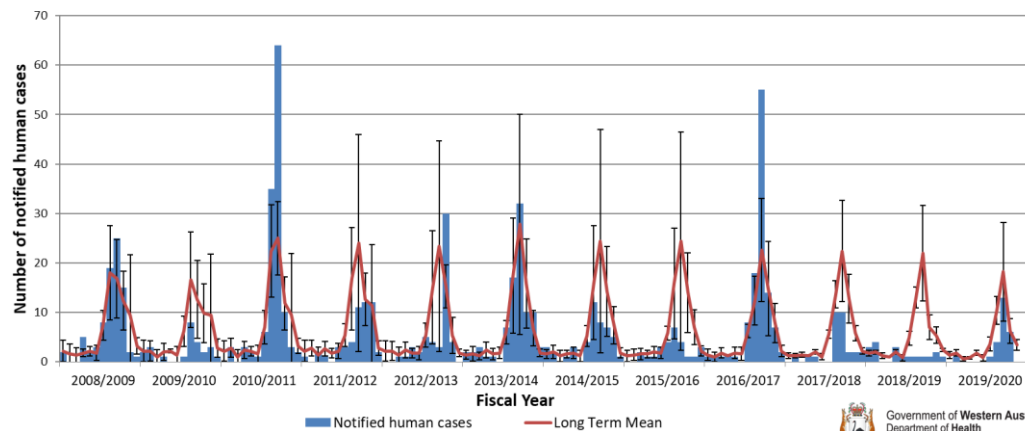
The number of cases was at or below the 5-year moving average.

Kimberley Health Region



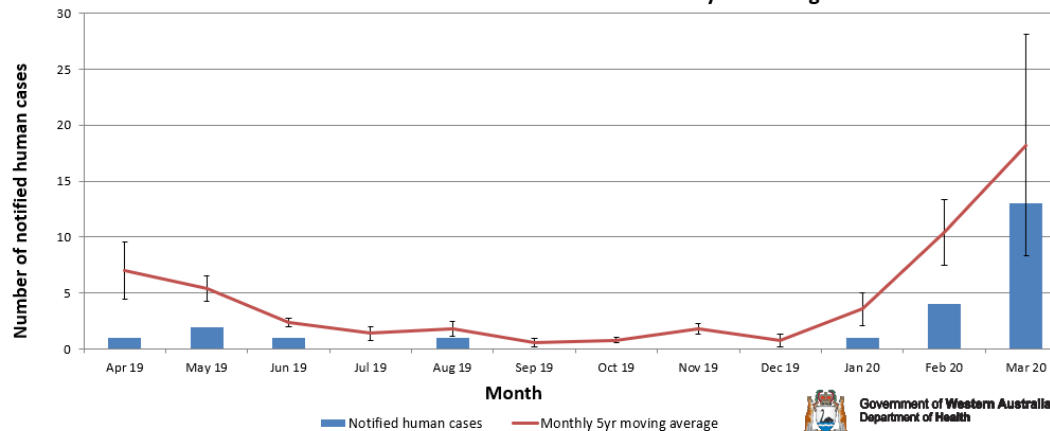
RRV 2020	Jan	Feb	Mar	Total
Kimberley	1	4	13	18
Broome (S)		2	12	14
BROOME		2	11	13
CABLE BEACH			1	1
Derby-West Kimberley (S)		1		1
FITZROY CROSSING		1		1
Wyndham-East Kimberley (S)	1	1	1	3
KUNUNURRA		1	1	2
WYNDHAM	1			1
Total	1	4	13	18

Long term cases of Ross River virus Kimberley Health Region



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Cases of Ross River virus Kimberley Health Region



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Ross River virus disease case data summary

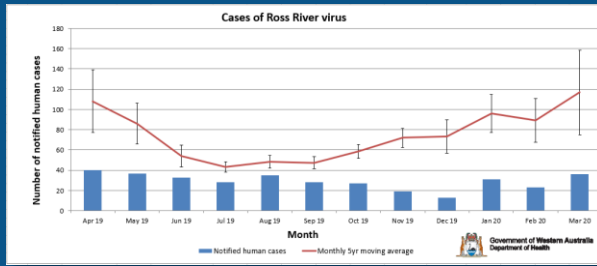
Western Australia: 2019/20

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 259 cases of RRV have been reported between 1 July 2019 and 30 April 2020 in Western Australia.

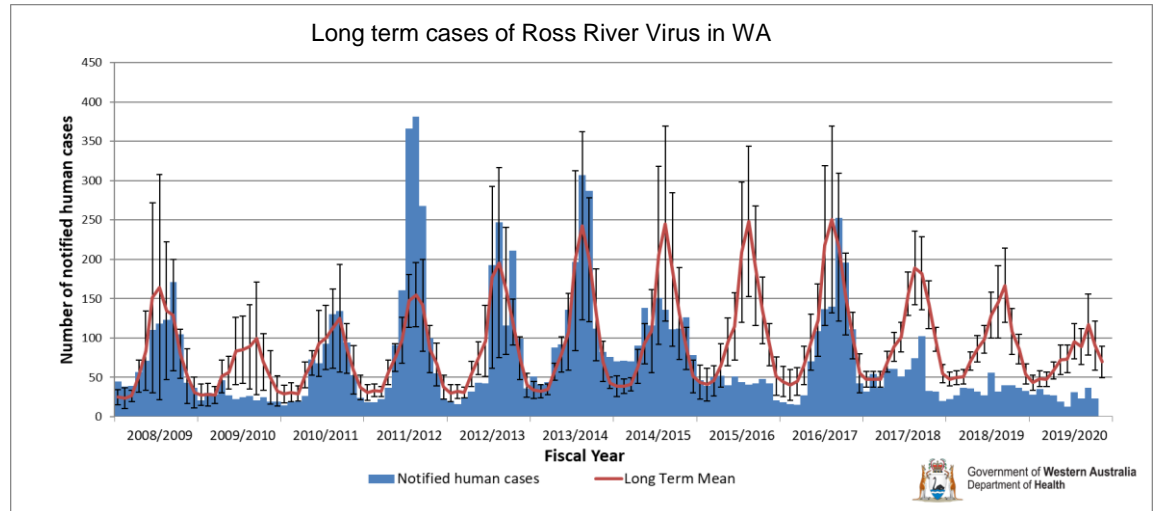
The number of cases was significantly below the 5-year moving average.



Serologically confirmed doctor-notified and laboratory reported cases of Ross River virus disease each month in WA, July 2019 - June 2020 #

** 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	1	4	13	6	0	0	25	69.4	65.9
PILBARA	4	3	1	1	1	0	2	1	6	2	0	0	21	34.0	30.2
GASCOYNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
MIDWEST	4	0	1	0	0	0	1	0	2	0	0	0	8	13.2	12.1
WHEATBELT	0	1	0	0	0	0	0	1	2	1	0	0	5	7.3	6.7
METRO	7	14	17	14	9	3	13	10	6	6	0	0	99	5.5	5.3
PEEL	4	4	5	2	5	3	4	4	4	4	0	0	39	14.4	13.2
LESCHENAULT	3	2	2	2	0	1	1	0	0	1	0	0	12	16.2	15.8
GEOGRAPHE	1	4	2	2	3	3	3	2	1	1	0	0	22	38.6	43.7
ELSEWHERE SW	0	2	0	3	1	0	1	0	0	0	0	0	7	14.7	15.6
SOUTH WEST	8	12	9	9	7	9	6	5	6	0	0	0	80	17.8	
GREAT SOUTHERN	0	1	0	2	0	2	5	1	0	2	0	0	13	21.4	20.1
GOLDFIELDS-ESPERANCE	2	3	0	0	0	1	0	0	2	0	0	0	8	14.5	15.0
WA UNDETERMINED	0	0	0	0	0	0	0	0	0	0	0	0	0		
INTERSTATE	3	0	0	1	0	0	0	0	0	0	0	0	4		
WA TOTAL (does not include interstate)	25	35	28	26	19	13	31	23	36	23	0	0	259		



Barmah Forest virus disease case data summary

Kimberley and State summary: 2019/20

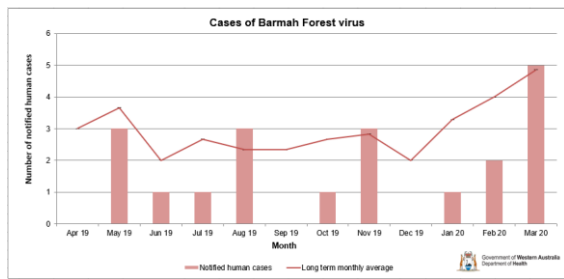
Data reflected in this summary of mosquito-borne disease is taken from the Western Australia Notifiable Infectious Disease Database (WANIDD) and includes enhanced surveillance data collected by Population Health Units and local governments (only locations with notified cases of disease are shown in tables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

Barmah Forest virus (BFV)

Western Australia

A total of 16 cases of BFV have been reported between 1 July 2019 and 30 April 2020 in WA.

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



Barmah Forest virus (BFV)

Kimberley Region

2 BFV cases were notified in the Kimberley Health region between Jan- Mar 2020.

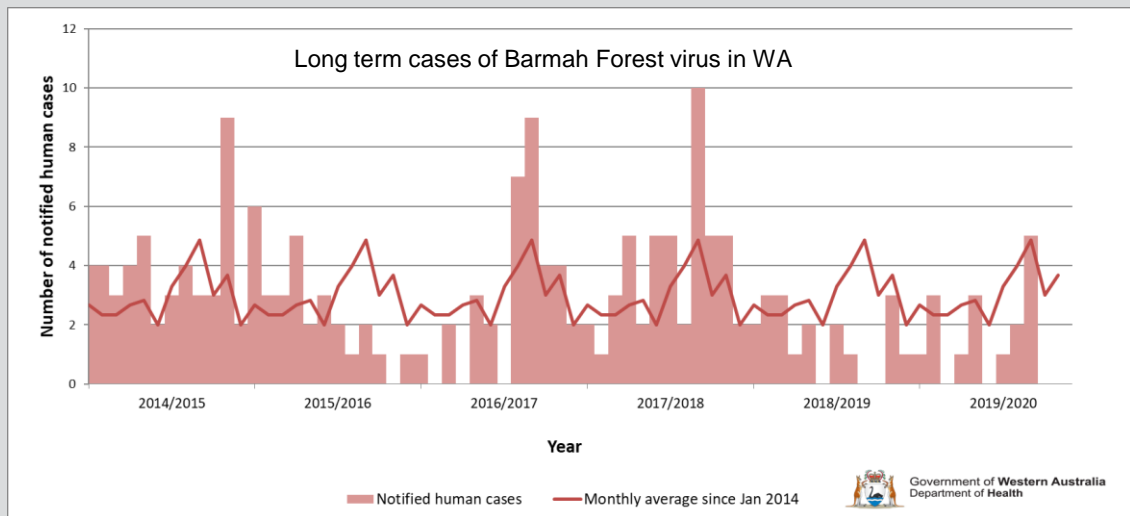
The 5-year moving average is up to one case per month for this region.

BFV 2020	Jan	Feb	Mar	Total
Kimberley			2	2
Broome (S)			1	1
BROOME			1	1
Derby-West Kimberley (S)			1	1
DERBY			1	1
Total			2	2

Serologically confirmed doctor-notified and laboratory reported cases of Barmah Forest virus disease each month in WA, July 2019 - June 2020

*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	1	0	0	0	0	2	0	0	0	4	11.1	11.7
PILBARA	0	0	0	0	0	0	0	1	0	0	0	0	1	1.6	1.4
GASCOYNE	1	0	0	0	0	0	0	0	0	0	0	0	1	10.6	9.7
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	2	0	0	0	0	0	0	0	0	0	0	2	0.1	0.1
PEEL	0	0	0	0	1	0	0	0	0	0	0	0	1	0.4	0.3
LESCHENAULT	0	0	0	0	0	0	0	1	0	0	0	0	1	1.4	1.0
GEOGRAPHE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
ELSEWHERE SW	0	0	0	0	0	0	1	0	0	0	0	0	1	2.1	1.4
SOUTH WEST	0	0	0	0	1	0	1	1	0	0	0	0	3	0.7	
GREAT SOUTHERN	0	0	0	0	1	0	0	0	3	0	0	0	4	6.6	6.5
GOLDFIELDS-ESPERANCE	0	0	0	0	1	0	0	0	0	0	0	0	1	1.8	1.7
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)	1	3	0	1	3	0	1	2	5	0	0	0	16		



Climate outlook for Western Australia

May – July 2020

Predicted impact of climatic conditions on mosquito breeding

Climate drivers, ENSO and the Indian Ocean Dipole (IOD), are both neutral and likely to remain so through until to spring. There is some likelihood that La Niña conditions may develop in late winter/early spring. Most models predict a negative IOD could develop from mid-winter (see explanation below).

Impact on mosquito breeding:

Above average rainfall conditions and warmer nights, predicted across the State, are conducive to mosquito breeding and possible mosquito-borne virus activity. This will be heightened if conditions swing towards La Niña in early spring.

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)

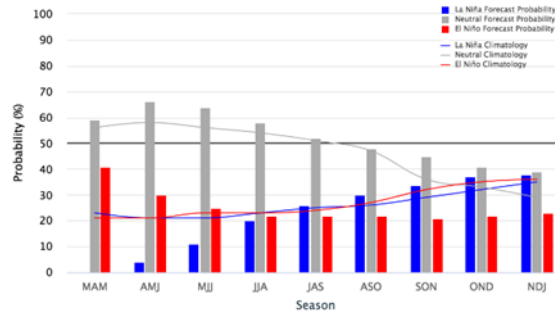
Positive IOD: Brings below average winter-spring rainfall, warmer days in the west, warmer nights in the south west, and cooler nights in the north.

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

Early-April 2020 CPC/IRI Official Probabilistic ENSO Forecasts

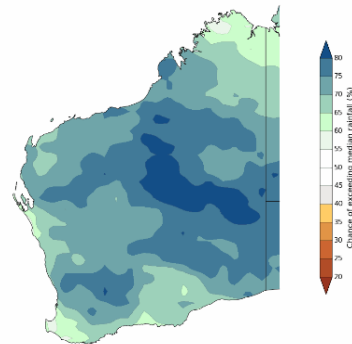
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C



ENSO Alert Status is Not Active. ENSO-neutral is expected to continue through to Spring 2020.

Australian BOM Rainfall Outlook Issued 16 April 2020

Chance of exceeding the median rainfall for May to July 2020

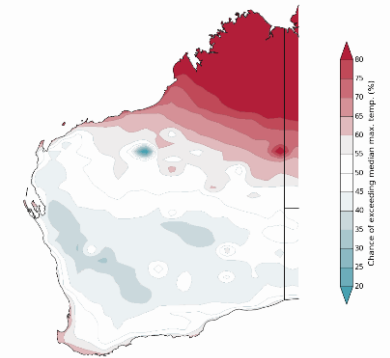


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Model: ACCESS-S1
Base period: 1980-2012
Model run: 13040200
Issue: 16/04/2020

Rainfall is likely to be above average across WA with higher chances in inland areas

Australian BOM Temperature Outlook Issued 16 April 2020

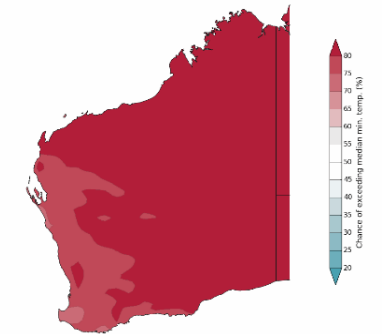
Chance of exceeding the median maximum temperature for May to July 2020



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Model: ACCESS-S1
Base period: 1980-2012
Model run: 13040200
Issue: 16/04/2020

Daytime temperatures are likely to be above average across Northern WA, although days have roughly equal chances of being above or below average in the south.

Chance of exceeding the median minimum temperature for May to July 2020



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Model: ACCESS-S1
Base period: 1980-2012
Model run: 13040200
Issue: 16/04/2020

Night-time temperatures are likely to be warmer than average across WA.