

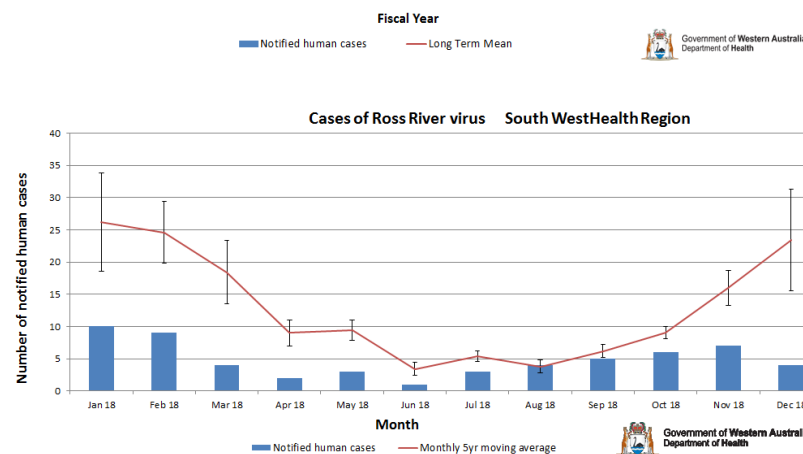
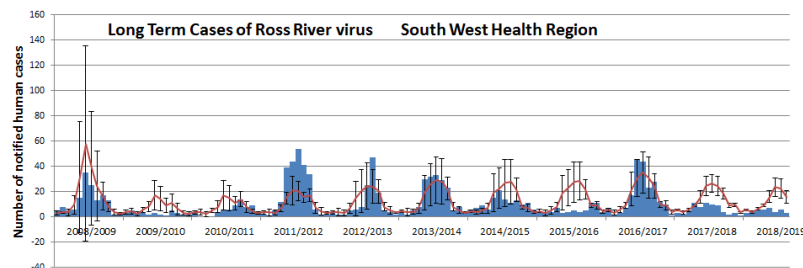


Data reflected in this summary of mosquito-borne disease in the Southwest Region is taken from the Western Australia Notifiable Infectious Disease Database (WANIDD) and includes enhanced surveillance data collected by Population Health Units and Local Governments. (Only locations with notified cases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

Ross River virus (RRV)

During these two quarters there were 29 RRV cases mostly from SW-Geographe and SW-Leschenault regions. 24 of these cases were notified by doctor, and follow up data are available for 7 of these cases. The monthly number of RRV cases was significantly lower than the long term monthly mean for all months except August 2018 when the number was within the normal range.

RRV 2018	Jul	Aug	Sep	Oct	Nov	Dec	Total
SW - Elsewhere				1	1		2
Augusta-Margaret River (S)					1		1
COWARAMUP					1		1
Donnybrook-Balingup (S)				1			1
DONNYBROOK				1			1
SW - Geographe	2	2	3	2	3	2	14
Capel (S)	1				1	2	4
BOYANUP					1		1
CAPEL						1	1
DALYELLUP						1	1
STIRLING ESTATE	1						1
Busselton (C)	1	2	3	2	2		10
BROADWATER		1					1
BUSSELTON	1		2				3
DUNSBOROUGH				1	1		2
GEOGRAPHE		1		1			2
VASSE					1		1
WEST BUSSELTON			1				1
SW - Leschenault	1	2	2	3	3	2	13
Bunbury (C)	1	1		2	1	1	6
BUNBURY	1			1	1		3
SOUTH BUNBURY				1			1
USHER		1				1	2
Dardanup (S)			1		2		3
BUREKUP					1		1
DARDANUP					1		1
EATON			1				1
Harvey (S)		1	1	1		1	4
BINNINGUP						1	1
HARVEY				1			1
ROELANDS			1				1
YARLOOP		1					1
Total	3	4	5	6	7	4	29



Barmah Forest Virus (BFV)

There were 3 BFV cases during these two quarters. These were all notified by doctor and follow up data are available for one of these cases. The long term monthly mean for BFV cases is less than 2 per month.

BFV 2018	Jul	Aug	Sep	Oct	Nov	Dec	Total
SW - Elsewhere	1						1
Augusta-Margaret River (S)	1						1
AUGUSTA	1						1
SW - Geographe				1			1
Capel (S)				1			1
GELORUP				1			1
SW - Leschenault				1			1
Harvey (S)				1			1
BINNINGUP				1			1
Total	1			1	1		3

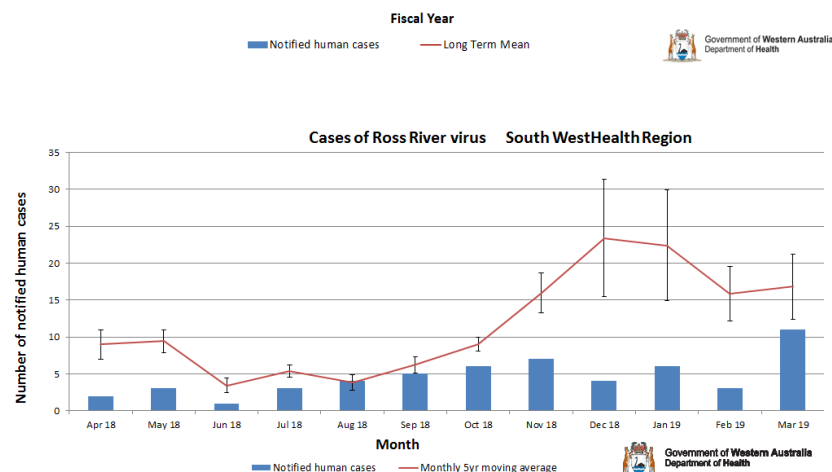
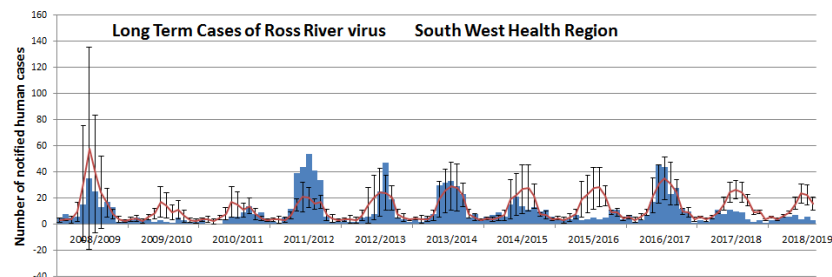


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Ross River virus (RRV)

There was a total of 20 RRV cases with the majority from SW-Geographe or SW-Leschenault regions. 16 of these were notified by doctor and follow up data are available for 6 of these cases. The monthly number of cases has been significantly lower than the long term monthly mean since September 2018.

RRV 2019	Jan	Feb	Mar	Total
SW - Elsewhere	1		1	2
Augusta-Margaret River (S)			1	1
MARGARET RIVER			1	1
Bridgetown-Greenbushes (S)	1			1
GREENBUSHES	1			1
SW - Geographe	2	2	4	8
Capel (S)	2	1	2	5
BOYANUP	1	1	1	3
CAPEL	1		1	2
Busselton (C)		1	2	3
BROADWATER			1	1
BUSSELTON		1	1	2
SW - Leschenault	3	1	6	10
Bunbury (C)			3	3
BUNBURY			1	1
USHER			1	1
WITHERS			1	1
Harvey (S)	3	1	3	7
AUSTRALIND	2	1	2	5
YARLOOP	1			1
BENGER			1	1
Total	6	3	11	20



Barmah Forest Virus (BFV)

There was one BFV case reported during this quarter. This case was notified by doctor but no follow up data are available. The long term monthly mean is less than 2 BFV cases per month.

BFV 2019	Jan	Feb	Mar	Total
SW - Elsewhere	1			1
Bridgetown-Greenbushes (S)	1			1
BRIDGETOWN	1			1
Total	1			1



El Niño conditions are associated with a decrease in rainfall and tidal activity.

La Niña brings wetter and warmer-than-normal weather which can increase mosquitoes and mosquito borne diseases.

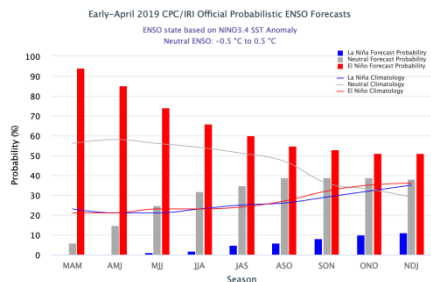
ENSO Wrap-Up issued by Australian BOM 30 April 2019
Outlooks indicate short-lived El Niño likely

The Bureau's *ENSO Outlook* remains at **El Niño ALERT**. This means the chance of El Niño developing in 2019 is approximately 70%. Although the surface of the tropical Pacific Ocean remains warmer than average, water below the surface of the ocean has been gradually cooling. A cooling of water at depth can lead to a cooling of the ocean surface, which may reduce the length of an event if one develops. Most climate models indicate surface warmth in the Pacific Ocean will remain at El Niño-like levels at least through May. The longer the ocean surface warmth remains, the more likely it is that the atmosphere will respond, and El Niño will develop. **If El Niño does develop in May, it's likely to be short lived.** El Niño typically brings drier than average conditions for eastern Australia during winter–spring, and warmer days across the southern two-thirds of the country. **The Indian Ocean Dipole (IOD) is currently neutral.** Climate outlooks indicate the IOD is likely to remain neutral for the remainder of autumn. However, by September half of the models predict a positive IOD will form, with the rest indicating neutral conditions will persist. A positive IOD typically means drier than average conditions for southern and central Australia during winter-spring.

IRI ENSO Forecast issued 19 April 2019

(International Research Institute for Climate and society)

ENSO Alert System Status: **El Niño Advisory** A weak El Niño is likely to continue through the Northern Hemisphere summer 2019 (65% chance) and possibly autumn (50-55% chance).



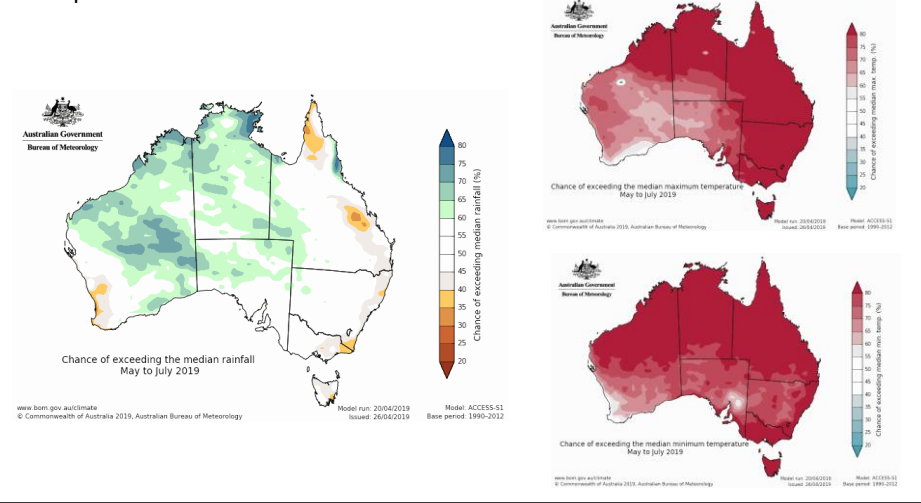
Climate outlook issued by Australian BOM 26 April 2019

Drier May in the east, wetter May–July for western and central Australia

While May is likely to be drier, the three months from May to July show most of southern Australia have no strong tendency towards above or below average rainfall. A wetter than average three months is likely for large parts of northwestern and central Australia, but many of these areas typically receive little or no rainfall at this time of the year, meaning only a small amount of rainfall is needed to exceed the median.

Warmer than average days and nights likely for most of Australia

Warmer than average days and nights during May to July are very likely (greater than 80% chance) for large parts of northern Australia, with chances reducing in the southwest. For northern Australia, the chances of being warmer than average are very high; greater than 80%. However, the forecast for drier than average conditions could bring more cloud-free nights, increasing the risk of frost in susceptible areas.



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