

Vanuatu Monthly Climate Summary

Vanuatu Meteorology & Geo-Hazards Department

August 2019



Issued: September, 2019

Issue 08

1. Highlights

Rainfall	<ul style="list-style-type: none"> Above Normal: Sola & Aneityum Below Normal for all other stations
Temperature	<ul style="list-style-type: none"> Highest daytime temperature recorded at Port Vila at 31.3°C Lowest nighttime temperature recorded at Whitegrass at 10.5°C
Significant Weather	<ul style="list-style-type: none"> High pressure systems mostly experienced in August Trade winds of moderate to fresh felt during this period
ENSO	<ul style="list-style-type: none"> Neutral State

2. Weather Patterns

High pressure systems dominated most of Vanuatu weather during the month of August. The first week of the month August was dominated by a ridge of high pressure established just south of Vanuatu and New Caledonia. Over Vanuatu, moderate to fresh south-easterly winds persisted. Few upper level convergences developed on the 6th contributed to some light rainfall experienced over the islands. From the 6th to 10th, the tight gradient over Vanuatu collapsed due to the shifting of the high pressure ridge further to the east and southeast of Tonga. Few surface troughs were evident north of Vanuatu but no significant further development from these troughs.

A frontal system pushed towards New Caledonia on the 10th with associated trough shifting over Vanuatu islands on the 11th & 12th. Another high pressure ridge pushed towards New Caledonia and Vanuatu on the 13th and moving eastwards maintaining fair weather over Vanuatu till the 18th. From 19th onwards, area of high pressure dominated Vanuatu islands till the 25th with a well-established tight pressure gradient till the end of the month. Moderate to fresh trades with roughs were experienced over Vanuatu during these periods.

3. Rainfall

The effect of the annual dry season for Vanuatu on rainfall persisted in August. Most of the stations recorded *below normal* rainfall, except Sola and Aneityum. Whitegrass received the lowest rainfall out of all stations at 1.1 mm, making it the driest August in 48 years.

Table 1: August 2019 Rainfall Summary for Vanuatu

Stations	Total Monthly Rainfall (mm)	Highest Daily Rainfall (mm)	Date of Daily Highest Rainfall Recorded	30 Year Monthly Average (1981-2010)	SCOPIC Rainfall Status
Sola	344.1	92.5	Monday 5 th	251.7mm	Above Normal
Pekoa	59.5	26.0	Wednesday 7 th	98.2mm	Below Normal
Lamap (AWS)	16.5	6.0	Saturday 31 st	83.2mm	Below Normal
Bauerfield	17.5	6.8	Wednesday 14 th	82.7mm	Below Normal
Port Vila	40.7	12.0	Saturday 10 th	78.6mm	Below Normal
Whitegrass	1.1	0.6	Tuesday 6 th	41.7mm	Below Normal
Aneityum	143.0	41.7	Monday 12 th	96.2mm	Above Normal

*Note: AWS – Automatic Weather Station

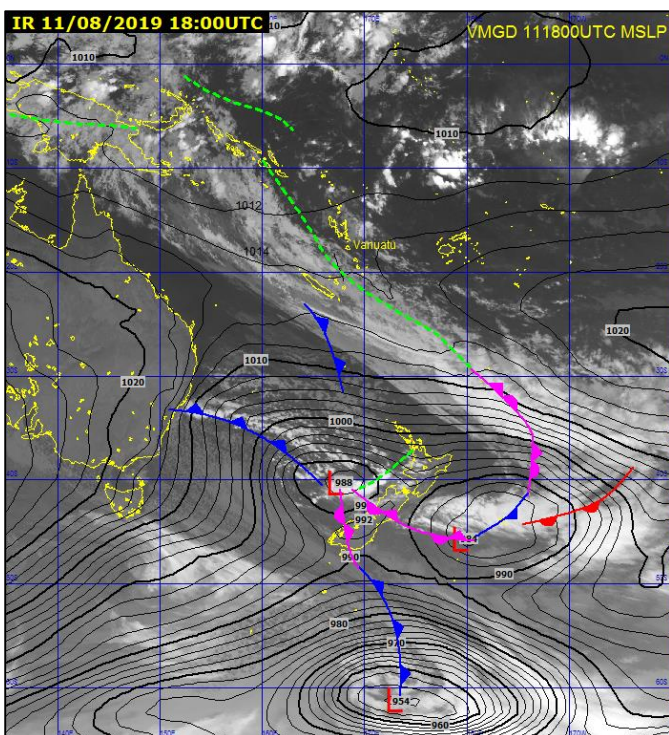
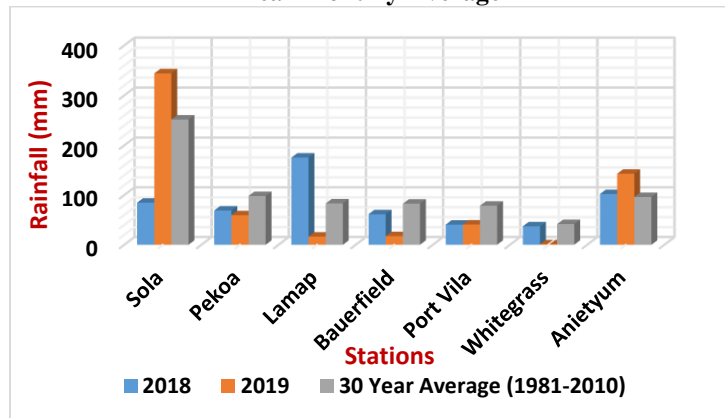


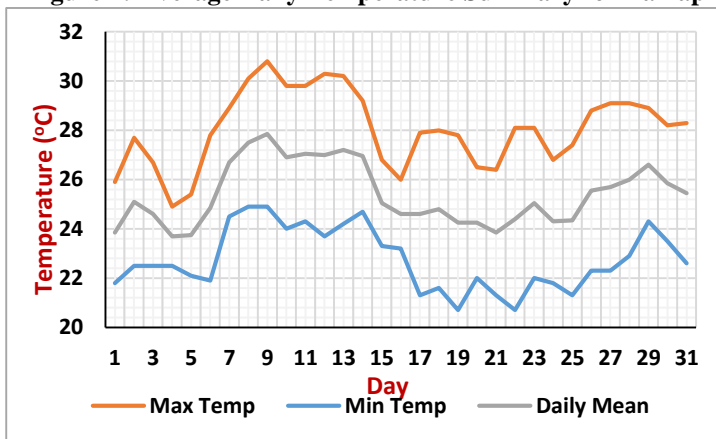
Figure 1: Mean Sea Level Pressure @ 5 am on 11/08/2019

Figure 2: August 2019 vs. August 2018 Rainfall compared to 30 Year Monthly Average



Rainfall for August 2019 was significantly lower for most of the stations compared to rainfall received in August of the previous year. As for Sola and Aneityum, rainfall was considerably higher in 2019.

Figure 4: Average Daily Temperature Summary for Lamap



The number of warm days exceeding 30.0°C was 4 for Lamap, with its peak temperature at 30.8°C. Like Pekoa, a notable series of high temperatures were evident around the first to second week of August.

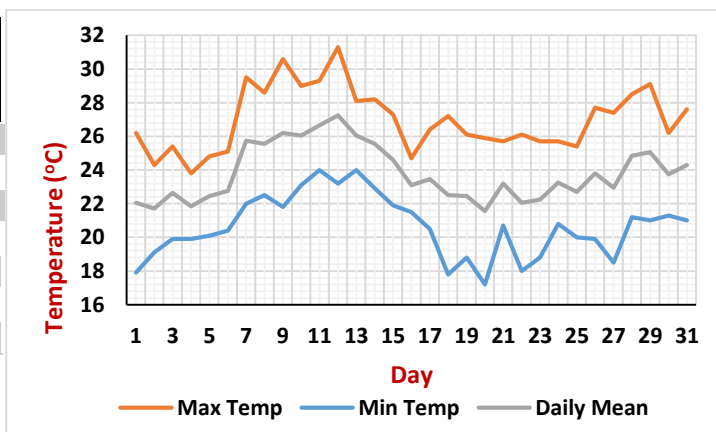
4. Atmospheric Temperatures

Table 2: August 2019 Temperature Summary for Vanuatu

Region	Stations	Source	Mean Max Temp (°C)	Mean Min Temp (°C)	Daily Mean Temp (°C)
Northern	Sola	MANUAL	-	-	-
	Pekoa	MANUAL	28.2	22.5	25.3
	Lamap	AWS	28.1	22.8	25.4
Southern	Bauerfield	MANUAL	26.8	18.3	22.6
	Port Vila	MANUAL	27.0	20.6	23.8
	Whitegrass	MANUAL	26.9	18.3	22.6
	Aneityum	MANUAL	25.4	-	-

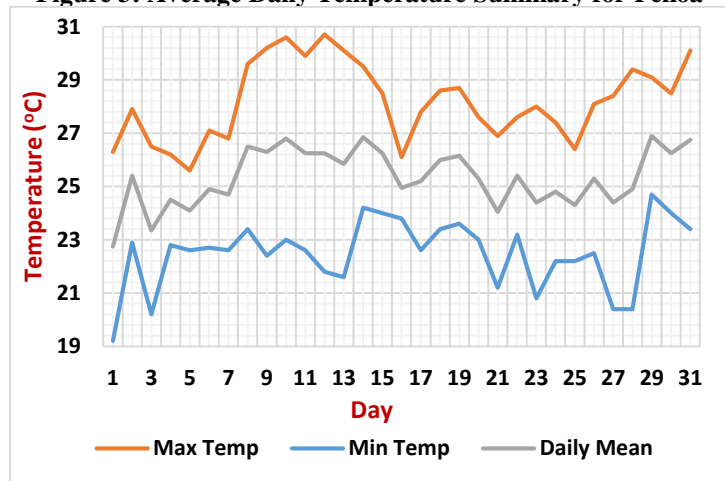
The common trend of decreasing temperatures from North to South can be seen in **Table 2**. Variations in temperature across the islands strongly ties to the archipelago's vertical position along latitudinal levels. For the above stations, Pekoa being the northern most station recorded higher daytime temperatures as compared to the Southern most station, Aneityum. The same trend was observed for night time temperatures.

Figure 5: Average Temperature Summary for Port Vila



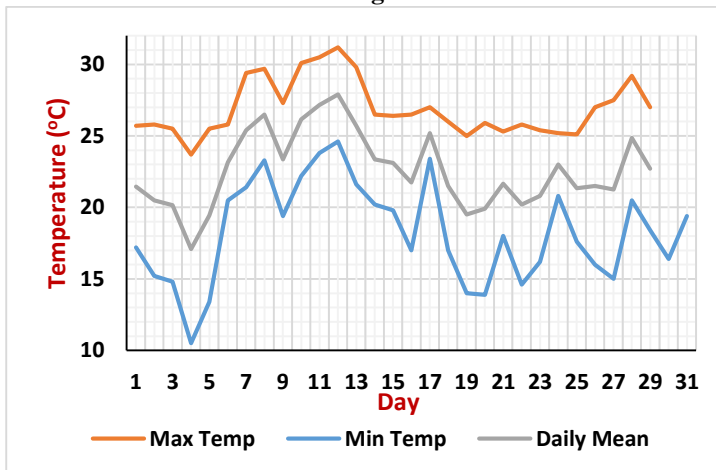
With respect to the two stations up north (Pekoa and Lamap), number of warm days reduced to 3 for Port Vila, with its peak temperature at 31.3°C. The coolest temperature was 17.2°C, recorded on the 20th Tuesday night.

Figure 3: Average Daily Temperature Summary for Pekoa



Compared to the previous month, the number of days where temperatures exceed 30.0°C increased from 1 to 5. The coolest temperature was experienced on Thursday night, 1st of August, at 19.2°C.

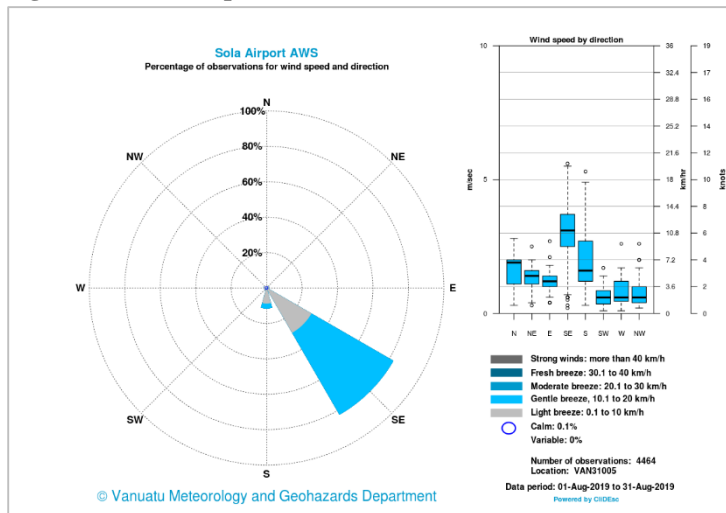
Figure 6: Daily Average Temperature Summary for Whitegrass



Whitegrass recorded the coldest temperature out of the five stations listed in **Table 2**, at 10.5°C. The station experienced a total of 8 days where temperatures drop below 17.0°C. On the other hand, the peak daytime temperature recorded at this station is 31.2°C.

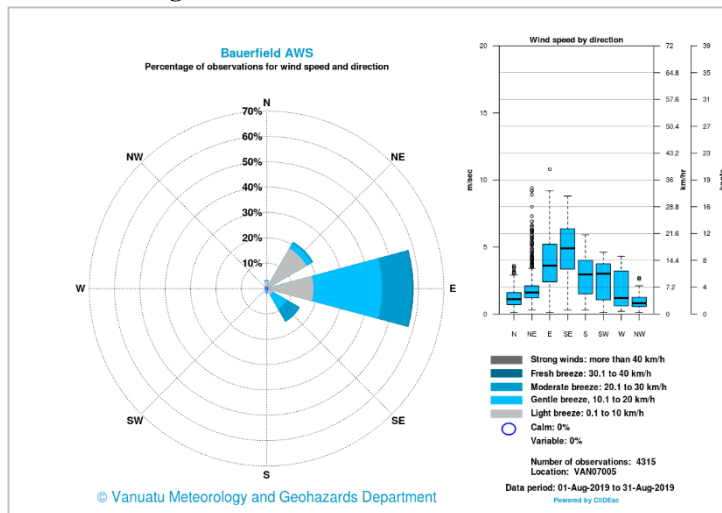
5. Wind

Figure 7a: Sola Airport WindRose AWS



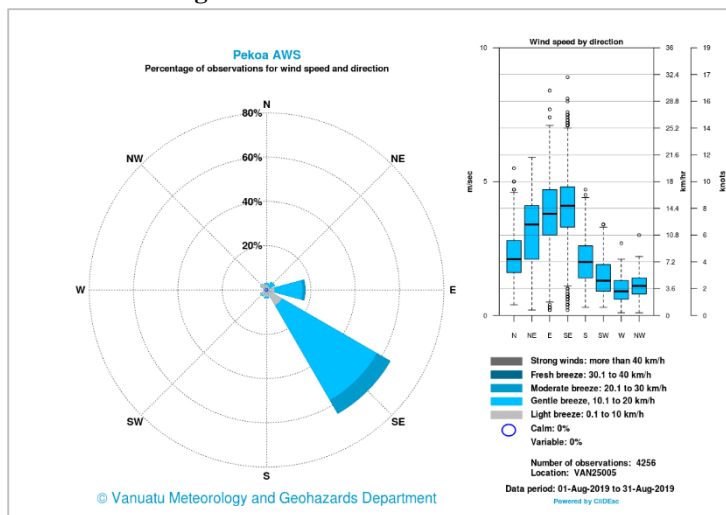
Gentle south-easterly breeze dominated Sola in August. Wind speed were generally 10.1km/h – 20km/h (5 – 10 knots).

Figure 7d: Bauerfield WindRose AWS



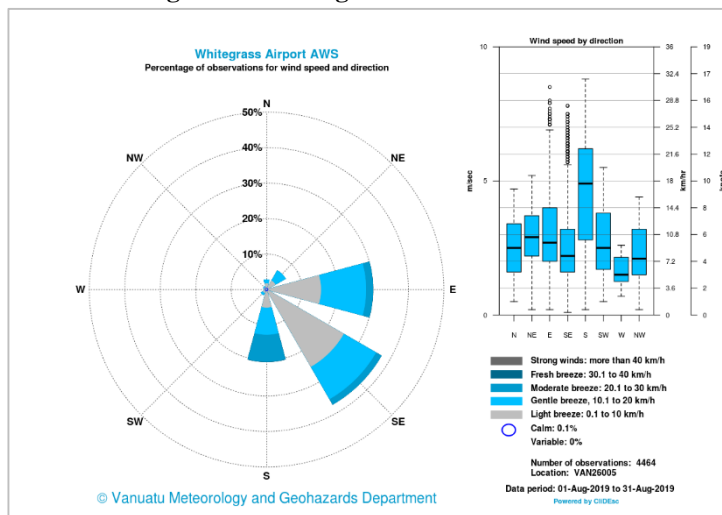
Dominant wind speed experienced at the station were gentle breeze of 10.1 to 20 km/h (5 to 10 knots). Dominant wind direction is E.

Figure 7b: Pekoa WindRose AWS



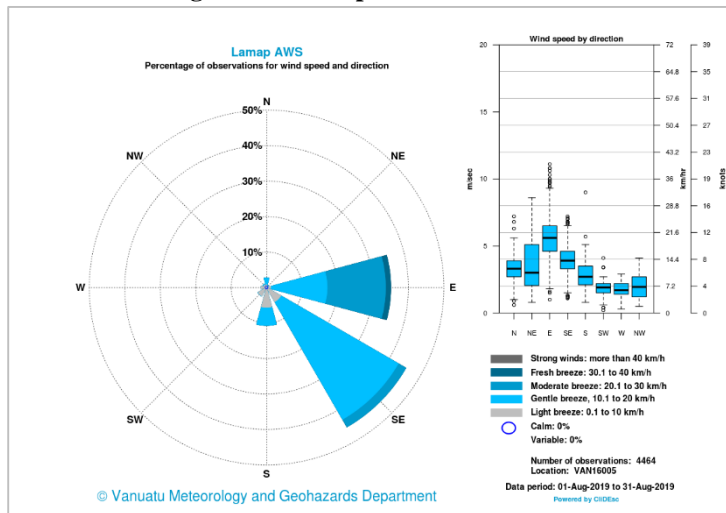
South-east breezes dominated Pekoa in August, most of which were gentle breeze of 10.1 to 20 km/h (5 to 11 knots). The station received maximum wind speeds of 20.1 or 30 km/h (11 to 16 knots).

Figure 7e: Whitegrass WindRose AWS



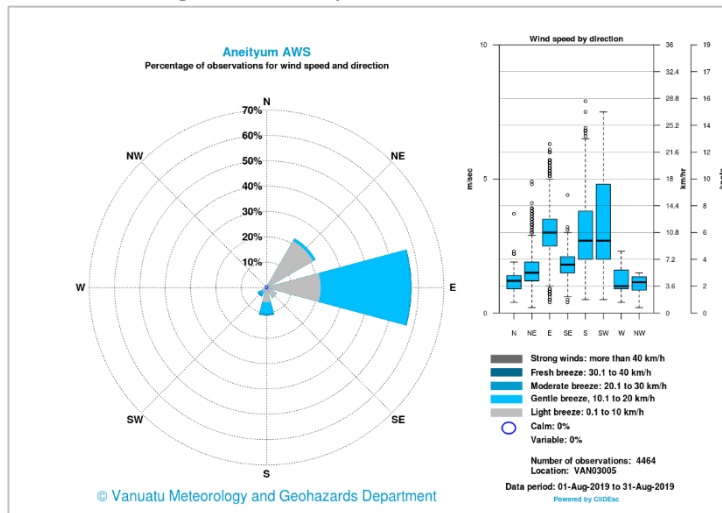
Light to moderate S, SE and E breeze prevailed at Whitegrass in August. Maximum wind speed recorded was 20.1 to 30 km/h (11 to 16 knots).

Figure 7c: Lamap WindRose AWS



Compared to the other stations, much of the fresh breeze was felt at Lamap at 30.1 to 40 km/h (16 to 22 knots). On the contrary, SE and E breezes generally dominated the station during August.

Figure 7f: Aneityum WindRose AWS

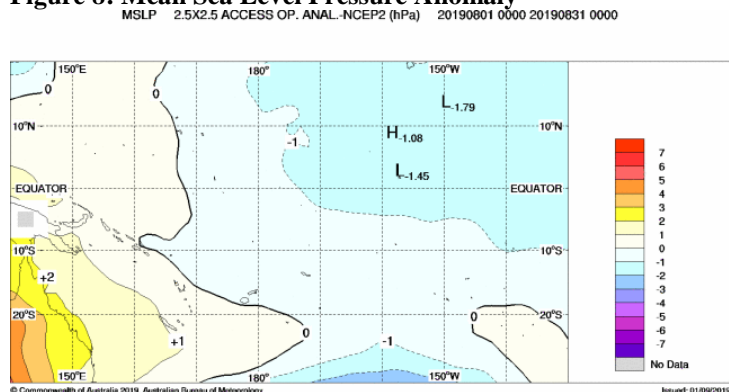


Aneityum was more dominated by gentle E breeze in August compared to the previous month. Maximum wind speed recorded was 10.1 to 20 km/h (5 to 10 knots).

6. Mean Sea Level Pressure (MSLP)

The August MSLP anomaly map (Figure 8) shows positive anomalies greater than +2 over northeast Australia, outlining areas of suppressed rainfall in the region. Pressure anomaly across much of the equatorial Pacific lies between +1 and -1, which is typical of an El Niño Southern Oscillation (ENSO) neutral state.

Figure 8: Mean Sea Level Pressure Anomaly



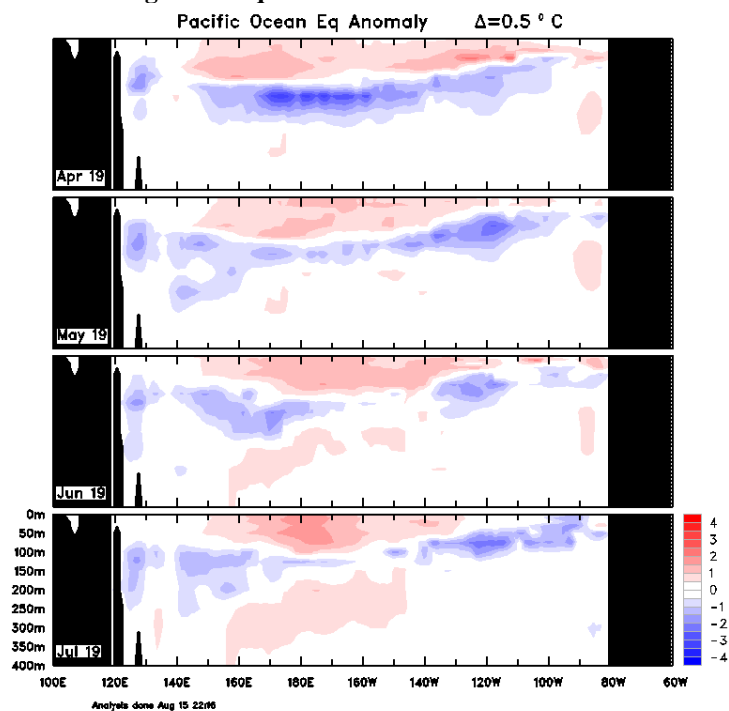
Source: <http://www.bom.gov.au/cgi-bin/climate/cmb.cgi?variable=mslp&area=spac&map=anomaly&time=latest>

7. El Niño Southern Oscillation (ENSO)

The ENSO status remains neutral – neither El Niño nor La Niña. Atmospheric and oceanic indicators of ENSO are mostly close to average, reflecting neutral tropical Pacific cloud patterns and rainfall.

The equatorial sub-surface anomalies (Figure 9) shows a pattern of weak shallow warm anomalies in the central to western equatorial Pacific, with weak cool anomalies extending across much of the equatorial Pacific at greater depth. This pattern has been generally similar since May. Anomalies, both warm and cool, are mostly within 1.5 degrees of average.

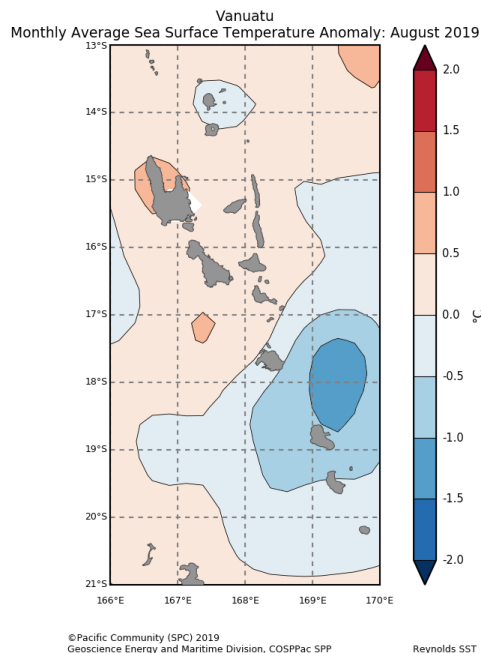
Figure 9: Equatorial Sub-surface anomalies



Source: <http://www.bom.gov.au>

8. Sea Surface Temperatures (SSTs)

Figure 10: Vanuatu Average Sea Surface Temperature Anomaly for August 2019

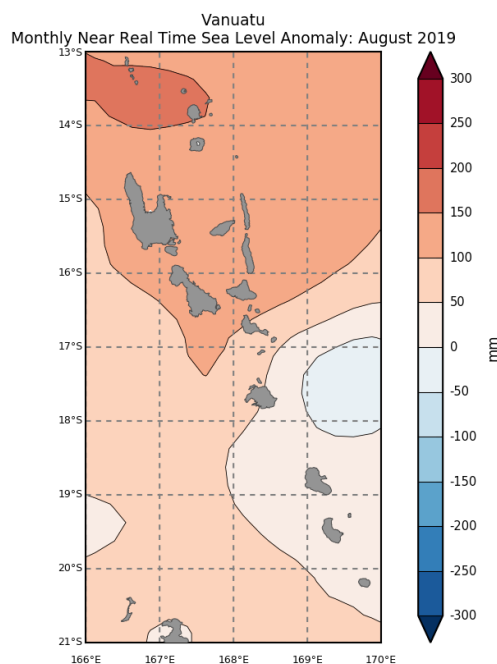


Source: <http://oceanportal.spc.int/portal/app.html#climate>

The southern waters of Vanuatu showed evidence of gradual cooling compared to the previous months; a pattern typical of the Vanuatu cold/dry season.

9. Sea Level (SL)

Figure 11: Vanuatu Average Sea Level Anomaly for August 2019



Source: <http://oceanportal.spc.int/portal/app.html#sealevel>

As suppressed sea level was observed around the southern islands with the coolest SSTs, the opposite was observed in the northern islands. SL anomaly was higher in the northern islands.

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Information presented in this summary is based in data
available at the time of publication