

# Vanuatu Ocean Outlook

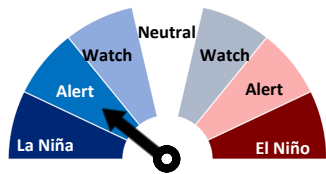
Vanuatu Meteorology & Geo-Hazards Department



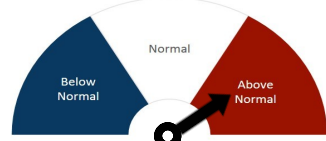
September 2020

Issue 16

## CURRENT OCEAN STATUS



ENSO status: **La Niña ALERT**



Sea Surface Temperature: **Above Normal**



Sea Level: **Above Normal**

## Ocean Summary:

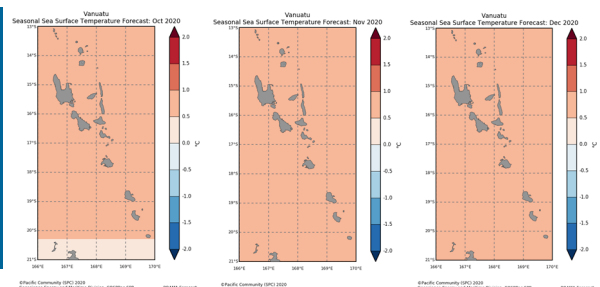
- The ENSO outlook remains at **La Niña ALERT**, meaning the chance of a La Niña forming in 2020 is around 70%. Key indicators of ENSO are currently approaching La Niña thresholds, indicating the atmosphere is responding to the changes in the ocean.
- All surveyed international climate models indicate La Niña thresholds will be met from October until at least the end of the year, with most models maintaining these values into early 2021.
- A La Niña ALERT is not a guarantee that La Niña will occur, rather it is an indication that most of the typical precursors of La Niña are in place. VMGD will continue to closely monitor the situation for further signs of La Niña development.
- **Luganville Harbour:** Lowest Tide: 0.17m on 17<sup>th</sup> September. at 10:41 am. Highest tide: 1.82m on 18<sup>th</sup> September at 04:15 am.
- **Port Vila Harbour:** Lowest Tide: 0.21m on 17<sup>th</sup> September. at 11:30 am. Highest tide: 1.57m on 19<sup>th</sup> September at 07:10 pm.

## Sea Surface Temperatures (SST) Outlook: October to December 2020

Warmer than average SSTs over Vanuatu generally strengthened compared to July. It is expected that warmer than average SSTs will persist into the next three months from October to December 2020.

**Application:** Different species of fish are sometimes known to be found at certain temperatures.

Common name	Species	All occurrences (°C)	Abundant occurrences (°C)
Skipjack	Katsuwonus pelamis	17-30	20-29
Yellowfin	Thunnus albacares	18-31	20-30
Bigeye	T.obesus	11-29	13-27
Albacore	T. alalunga	13-25	15-21
Southern	Bluefin T.maccoyii	10.5-21	17-20

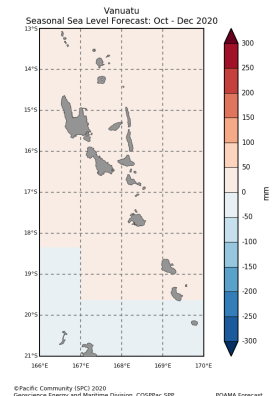


## Sea Level (SL) Outlook: October to December 2020

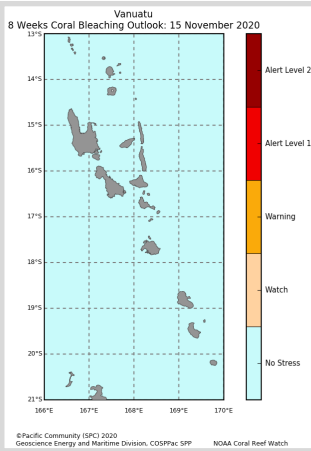
The Seasonal Sea Level Forecast map shows above average sea level is expected over Vanuatu within the next three months.

### Application

- High tides at higher sea level could cause inundation of waves overland (seas-flooding) during bad weather / windy conditions causing rough seas.
- Low tides at lower sea level could reduce sea level over wharfs and docks, and could also expose coral reefs further during low tides.



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POMM Forecast

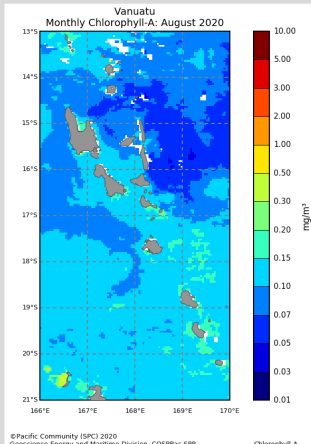


## Coral Reef Outlook: November 2020

The 8 weeks Coral Bleaching outlook shows No Stress on corals over Vanuatu for the next 8 weeks. This means, there is no potential threat expected on corals until 15 November 2020.

### Application

- Coral reef provide food for fishes and shells. When there is coral bleaching, the coral can die and the whole food chain is affected.
- Limiting fishing in the region can increase fish populations, which in turn maximizes the consumption of plant growth and limits their impact on the corals. (Marshall and Schuttenberg, 2006).

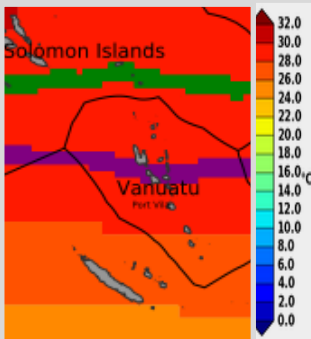


## Monthly Chlorophyll

Chlorophyll concentration have decreased over Vanuatu since July 2020. Up to 0.15 mg/m<sup>3</sup> of chlorophyll (blue colour) dominated most of the islands, with much less concentration evident over the Torba and Penama group.

### Application

- Fishermen targeting smaller pelagic (open sea) fish may be interested in the chlorophyll concentration.
- Filter feeders (i.e. oysters, mussels, clams, scallops) thrive in high chlorophyll concentrations.
- Crown of thorns spawning is likely to be more successful under high chlorophyll concentrations.



## The Convergence Zone Outlook: October—December 2020

The green line is the average position of the Warm pool –cold tongue Convergence zone. The purple line is the edge of the Warm pool –cold tongue Convergence zone. Forecast shows this Convergence Zone will remain over Solomon islands from October to November, before shifting south over Vanuatu in December.

### Application:

Along the eastern edge of Warm pool-cold tongue Convergence zone is rich with nutrient which support high abundance of tuna.

## Top Highest and Lowest Tides for October 2020 to December 2020: Luganville & Port Vila Harbour

Luganville Harbour						Port Vila Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)	Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.24m	19 Oct	12:09 am	1.89m	17 Oct	04:59 am	0.23m	20 Oct	01:50 am	1.63m	17 Oct	05:55 pm
0.16m	16 Nov	11:58 pm	1.94m	15 Nov	04:30 am	0.14m	17 Nov	12:46 am	1.66m	15 Nov	05:20 pm
0.12m	15 Dec	11:48 pm	1.92m	14 Dec	04:13 pm	0.12m	16 Dec	12:35 am	1.63m	14 Dec	04:56 pm

## Moon Phases for September 2020 to November 2020

New Moon ●	First Quarter ◐	Full Moon ○	Last Quarter ◑
		2nd October	10th October
17th October	24th October	1st November	9th November
15th November	22nd November	30th November	8th December
15 December	22 December	30th December	