

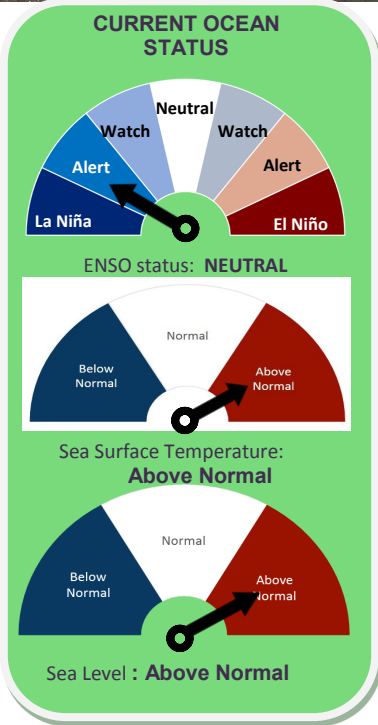
# Vanuatu Ocean Outlook

Vanuatu Meteorology & Geo-Hazards Department



November 2021

Issue 30



## Ocean Summary:

The ENSO outlook has been raised to La-Niña ALERT, this is due to cooling in the tropical Pacific ocean. When La Niña ALERT criteria have been met, La Niña has subsequently developed around 70% of the time, thus increasing chances of above normal rainfall over Vanuatu regions.

The 30-day Southern Oscillation Index (SOI) for the 30 days ending 24 October 2021 was +11.6. The 90-day SOI value was +7.5. The 30-day SOI has gradually increased over the past month. Sustained negative values of the SOI below -7 typically indicate El Niño while sustained positive values above +7 typically indicate La Niña. Values between +7 and -7 generally indicate neutral conditions.

Trade winds for the 5 days ending 24 October 2021 were slightly stronger than average across far western and tropical Pacific, and close to average in the central and eastern.

Sea surface temperature for tropical Pacific ocean for the week ending 24 October were cooler than average along the equator in central and eastern Pacific ocean.

**Loganville Harbor:** Lowest Tide: 0.19m on 7<sup>th</sup> November at 00:08am. Highest tide: 1.91m on 5<sup>th</sup> November at 16:44pm.

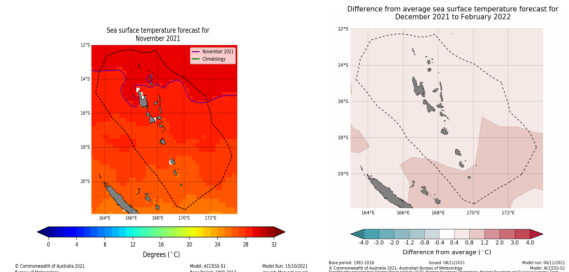
**Port Vila Harbor:** Lowest Tide: 0.16m on 7<sup>th</sup> November. at 00:59am. Highest tide: 1.63m on 5<sup>th</sup> November at 17:36pm.

## Sea Surface Temperatures (SST) Outlook: October (monthly) and November to January (seasonally)

- The monthly average sea surface temperature anomaly for November is above average over all region of Vanuatu. 27-29°C up northern region and 24-26°C from central to southern region.
- The difference from average of SSTs outlook forecasted for December to February shows that Vanuatu is expecting warmer average sea surface temperature for the all Vanuatu regions.

Application: Different species of fish are sometimes known to be found a certain ocean 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

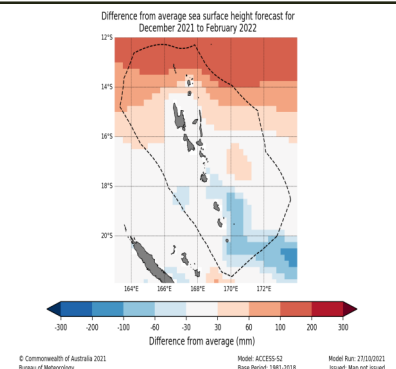


## Sea Level (SL) Outlook: November 2021 to January 2022

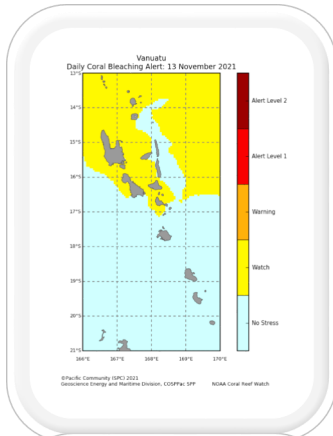
Sea level outlook Forecast for December to February shows below average for all provinces except Torba province which will be expecting above average sea level.

Application

- High tides at higher sea level could cause inundation of wave overland (seas-flooding), also contributing to coastal erosion. 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.



## Coral Reef Outlook: 13 November 2021

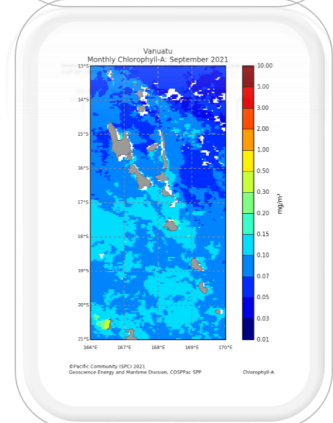


The Coral bleaching outlook for 13 November indicate Watch level over Torba, Sanma, Penama and malampa waters while No stress (no coral bleaching) level Shefa and Tafea Provinces.

### Application.

- Coral reef protect coastal areas by reducing waves, and also provide food for fishes and shells. When coral bleaching occur corals die, thus affecting the whole food chain and underwater ecosystem.
- 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 for September 2021

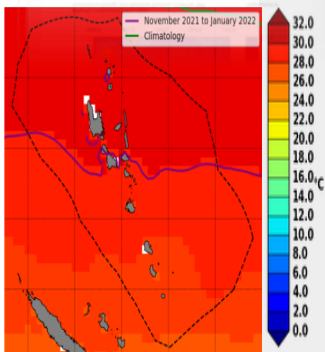


The Vanuatu ocean chlorophyll concentrations has decrease compare to the past months . Monthly chlorophyll for September shows 0.05 to 0.10mg/m<sup>3</sup> (light blue) chlorophyll concentration's over most of Vanuatu ocean waters starting from north to southern region.

### 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: November to January 2022



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 be crossing the banks and Torres group in the northern regions of Vanuatu from October to December 2021..

### 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 to December 2021: Luganville & Port Vila Harbor

Luganville Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.19m	7 Nov	00:08am	1.91m	5 Nov	16:44pm
0.11m	6 Dec	00:00am	1.94m	4 Dec	16:22pm

Port Vila Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.16m	7 Nov	00:59am	1.63m	5 Nov	17:36pm
0.09m	6 Dec	00:47am	1.65m	4 Dec	17:08pm

## Moon Phases for October to December 2021

New Moon	First Quarter	Full Moon	Last Quarter
5 November	11 November	19 November	27 November
4 December	11 December	19 December	27 December