



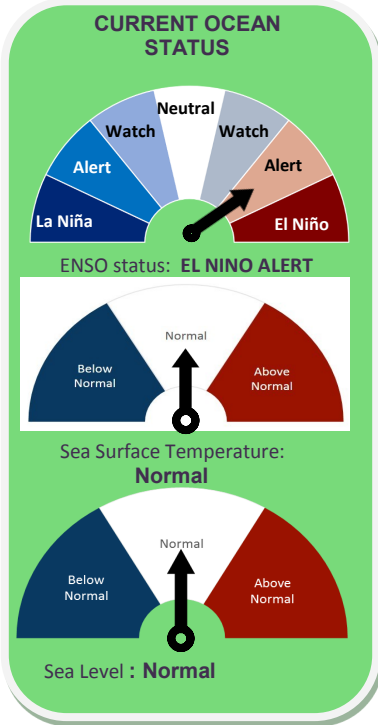
# Vanuatu Ocean Outlook

Vanuatu Meteorology & Geo-Hazards Department



August

Issue 47



## Ocean Summary:

The ENSO Outlook remains at El Niño Alert. When El Niño Alert criteria have been met in the past, an El Niño event has developed around 70% of the time. .

The 30-day Southern Oscillation Index (SOI) for the period ending 30 July 2023 was  $-4.3$ , with the value decreasing from  $+3.9$  over the past fortnight. The 60-day SOI and the 90-day SOI were  $-2.7$  and  $-7.9$ , respectively. . 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 30 July 2023 were close to average over most of the tropical Pacific. During El Niño there is a sustained weakening, or even reversal, of trade winds across much of the tropical Pacific.

For the week ending 30 July 2023, sea surface temperatures (SSTs) were warmer than average across almost all of the equatorial region of the tropical Pacific Ocean.

**Loganville Harbor:** Lowest Tide: 0.05m on 2 August at 11:27am. Highest tide: 1.90m on 31 August at 04:25am.

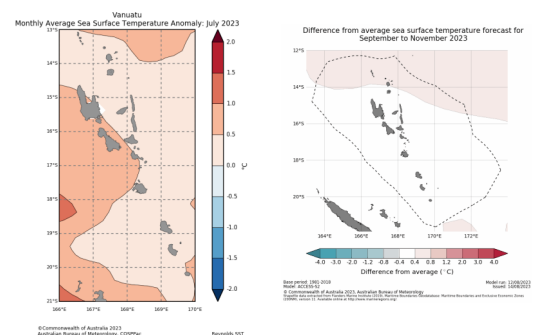
**Port Vila Harbor:** Lowest Tide: 0.05m on 2 August at 12:13am Highest tide: 1.55m on 31 August at 05:09am.

## Sea Surface Temperatures (SST) Outlook: July (monthly) and September to November (seasonally) 2023

- Monthly average Sea surface temperature anomaly for July in Vanuatu was  $0.5^{\circ}\text{C}$  for Torba, Penama and Tafea, while  $0.8^{\circ}\text{C}$  for Sanma and Malampa Province.
- Seasonal sea temperatures around Vanuatu were near average with difference of  $0.4^{\circ}\text{C}$  for all province except Torba province with above average difference of  $0.8^{\circ}\text{C}$ .

Application: Different species of fish are sometimes known to be found a cer-

Common name	Species	All occurrences ( $^{\circ}\text{C}$ )	Abundant occurrences ( $^{\circ}\text{C}$ )
Skipjack	Katsuwonus pelamis	17-30	20-29
Yellow fin	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

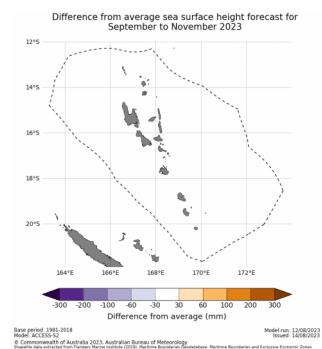


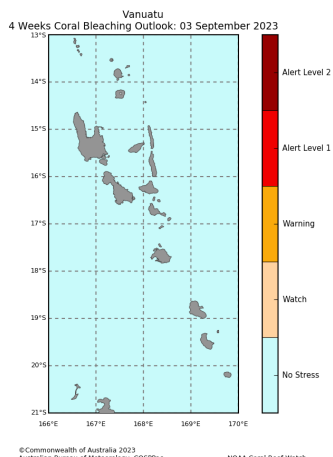
## Sea Level (SL) Outlook: September to November 2023

The average sea surface height/level for all Country in three months period is near average with average difference of 30mm.

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.





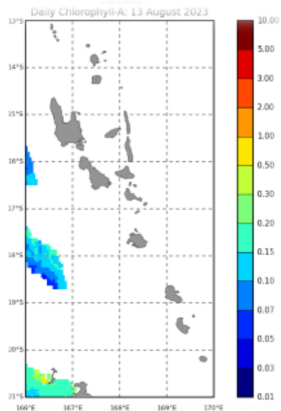
### 4 weeks Coral Reef Bleaching Outlook until 3 September 2023

The 4 weeks coral bleaching outlook until 3 September, indicates No stress on coral reefs of all Vanuatu regions

#### 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).

### Daily Chlorophyll A 13 August 2023

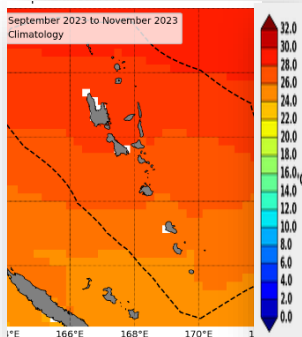


The Daily ocean Chlorophyll concentration issue on 13 August 2023 shows absence of chlorophyll near coastal water Vanuatu islands however there is indications of chlorophyll moving in from the eastern Vanuatu waters.

#### 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 September to November 2023



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*. Outlook for September to November show that the locations of the edge of warm pool and cold tongue has shifted away from Vanuatu.

#### 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 August to October 2023: Luganville & Port Vila Harbor

Luganville Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.13m	1 Sept	11:42am	1.89m	1 Sept	05:11am
0.27m	29 Oct	23:23pm	1.88m	28 Oct	16:10pm
0.23m	27 Nov	23:14pm	1.85m	26 Nov	15:43pm

Port Vila Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.15m	1 sept	12:30pm	1.58m	30 Sept	16:16pm
0.23m	31 Oct	01:00am	1.60m	28 Oct	17:02pm
0.20m	29 Nov	00:44am	1.58m	26 Nov	16:28pm

### Moon Phases for 18 July to 7 October 2023

New Moon	First Quarter	Full Moon	Last Quarter
16 August	24 August	31 August	7 September
15 September	23 September	29 September	7 October
15 October	22 October	29 October	5 November

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