



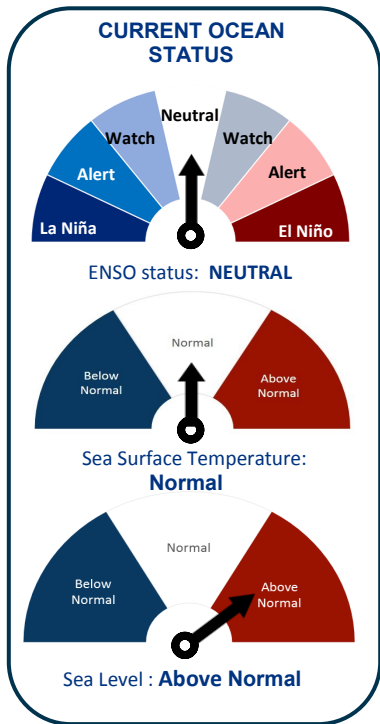
# Vanuatu Ocean Outlook

## Vanuatu Meteorology & Geo-Hazards Department



March 2021

Issue 22



### Ocean Summary:

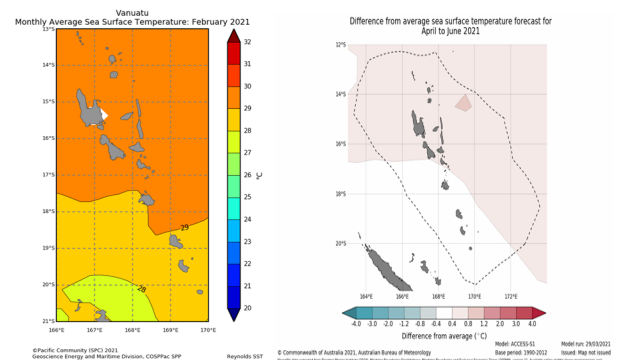
- The El Niño Southern Oscillation (ENSO) outlook has moved from La Niña to INACTIVE. Most of the indicators have now returned to neutral levels, except for cloudiness near the Date Line which continues to show a weak La Niña-like signature. There are no indicators that El Niño or La Niña will develop in the coming months.
- The Southern Oscillation Index (SOI) value for the 30 days ending 28 March was +0.5. The 90 day SOI value was +10.9. The 30-day value has remained within ENSO-neutral values over the past two weeks.
- Trade winds for the 5 days ending 28 March were stronger than average over much of the tropical Pacific around and west of the Date Line, and near average strength in the centre and east.
- Tropical Pacific Ocean sea surface temperatures have persisted at ENSO-neutral for several weeks. Below the surface, much of the tropical Pacific is now at near average temperatures.
- Luganville Harbor:** Lowest Tide: 0.18m on 28<sup>th</sup> March at 10:57 pm. Highest tide: 1.73m on 30<sup>th</sup> March at 05:43 am.
- Port Vila Harbor:** Lowest Tide: 0.27m on 1<sup>st</sup> March at 00:59 am. Highest tide: 1.55m on 30<sup>th</sup> March at 06:44 am.

### Sea Surface Temperatures (SST) Outlook: April to June 2021

In February, SSTs over Tafea ranges from 28°C—29°C, elsewhere SSTs of 29°C—30°C were evident. Outlook shows weak-warmer than average SSTs are likely for Vanuatu for the next three months.

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

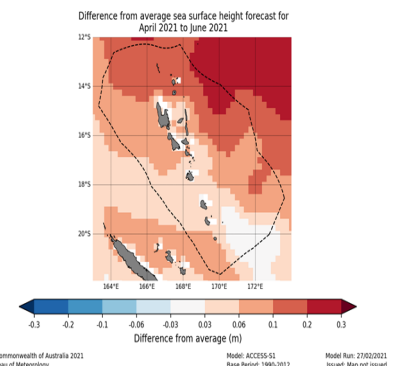


### Sea Level (SL) Outlook: April to June 2021

Sea level is expected to be higher than average over the next three months.

#### 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: April 2021

Coral bleaching Outlook for April shows Torba, Sanma, Penama and Malampa provinces are expected to be in warning forecast, while no stress is forecasted over most of Shefa (except Shepherd groups), and Tafea province.

### 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.

## Monthly Chlorophyll

In contrast to previous months, chlorophyll concentrations have significantly increased over Vanuatu waters in December 2020. Up to 0.5 mg/m<sup>3</sup> of chlorophyll (green color) 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.

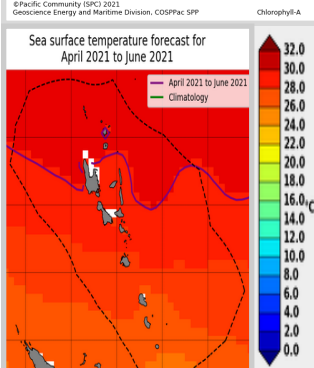
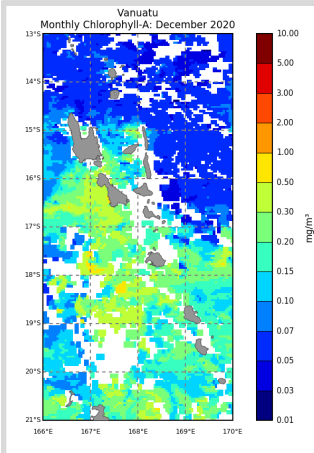
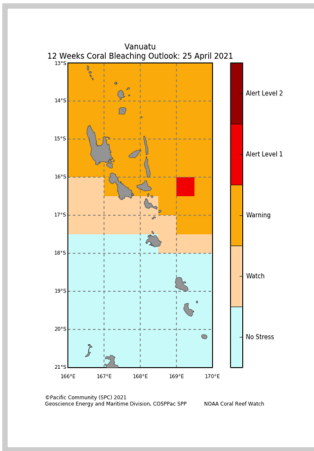
## The Convergence Zone Outlook: April to June 2021

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 shift north compared to the previous month.

### 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 April 2021 to June 2021: 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)
0.13m	28 Apr	11:45 am	1.79m	28 Apr	05:12 am	0.15m	29 Apr	01:28 pm	1.56m	28 Apr	06:06 am
0.06m	27 May	11:36 am	1.81m	27 May	04:48 am	0.05m	28 May	01:14 pm	1.55m	26 May	04:52 am
0.05m	25 Jun	11:28 am	1.81m	25 Jun	04:34 am	0.03m	26 Jun	01:01 pm	1.52m	24 Jun	04:27 am

## Moon Phases for April 2021 to June 2021

New Moon ●	First Quarter ◐	Full Moon ○	Last Quarter ◑
			4 April
12 April	20 April	27 April	4 May
12 May	20 May	26 May	2 June
10 June	18 June	25 June	