



Vanuatu Ocean Outlook

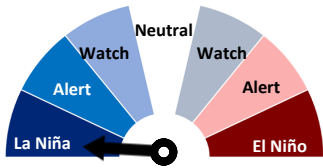
Vanuatu Meteorology & Geo-Hazards Department



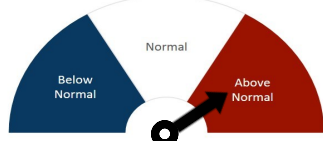
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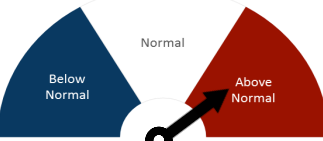
CURRENT OCEAN STATUS



ENSO status: **LA NIÑA**



Sea Surface Temperature: **Above Normal**



Sea Level : **Above Normal**

Ocean Summary:

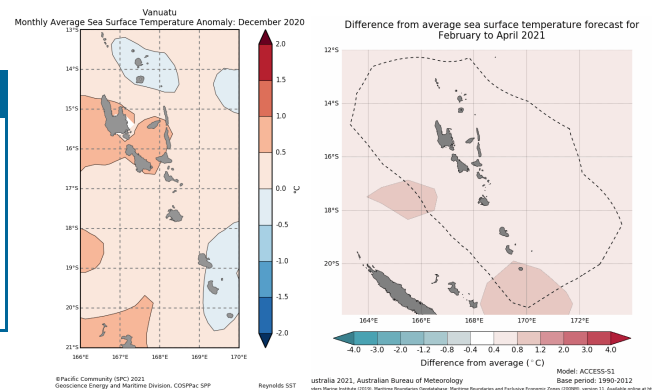
- The 2020-21 **LA NIÑA** is likely to have peaked in terms of sea surface temperatures in the central and eastern Pacific Ocean. International climate models surveyed by VMGD indicate a return to neutral levels (neither La Niña or El Niño) towards the end of cyclone season. However, typical La Niña impacts are still likely to be felt (although not strong), even as the La Niña weakens.
- The Southern Oscillation Index (SOI) value for the 30 days ending 17 January was +19.5. The 90 day value was +14.0. Both values remain within La Niña threshold.
- Trade winds were stronger than average over the central and western tropical Pacific.
- The strength of warmer than average sea surface temperatures over the western Pacific has decreased in December. Cooler than average sea surface temperatures over the central and eastern Pacific have also decreased.
- Luganville Harbour:** Lowest Tide: 0.13m on 13th January, at 11:38 pm. Highest tide: 1.85m on 12th January at 04:03 pm.
- Port Vila Harbour:** Lowest Tide: 0.15m on 14th January, at 12:25 am. Highest tide: 1.57m on 12th January at 04:43 pm.

Sea Surface Temperatures (SST) Outlook: February 2021 to April 2021

Warmer than average SSTs have slightly decreased in December 2020. SSTs up to 0.5°C above average are forecasted for Vanuatu for the next three months.

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

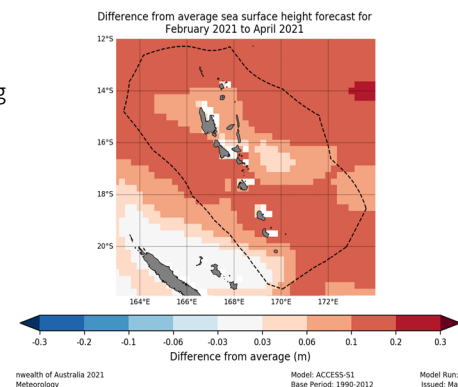


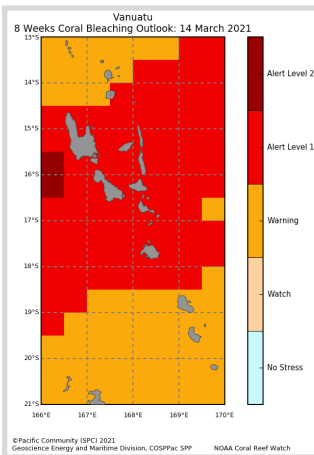
Sea Level (SL) Outlook: February 2021 to April 2021

Forecast for SL for the next three months varies from normal to above normal.

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.



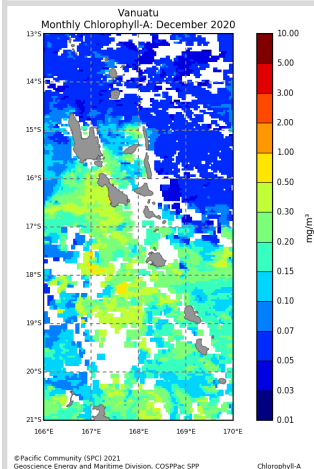


Coral Reef Outlook: March 2021

Outlook for March shows Sanma, Penama, Malampa and Shefa, remains at Alert Level 1, while Warning is forecasted for Torba and Tafea.

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).

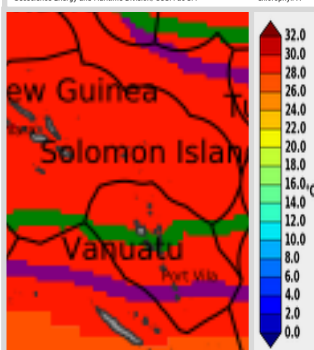


Monthly Chlorophyll

In contrast to previous months, chlorophyll concentrations have significantly increased over Vanuatu waters in December 2020. Up to 0.5 mg/m³ of chlorophyll (green 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: December 2020 — February 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 remain over Vanuatu from December 2020 to February 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 February 2021 to April 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)
0.16m	27 Feb	11:29 pm	1.77m	27 Feb	04:49 pm	0.22m	12 Feb	12:09 am	1.51m	11 Feb	05:24 pm
0.18m	28 Mar	10:57 pm	1.73m	30 Mar	05:43 am	0.27m	1 Mar	12:59 am	1.55m	30 Mar	06:44 am
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

Moon Phases for February 2021 to April 2021

New Moon ●	First Quarter ◐	Full Moon ○	Last Quarter ◑
			5 February
12 February	20 February	27 February	6 March
13 March	22 March	29 March	4 April
12 April	20 April	27 April	