



Vanuatu Ocean Outlook

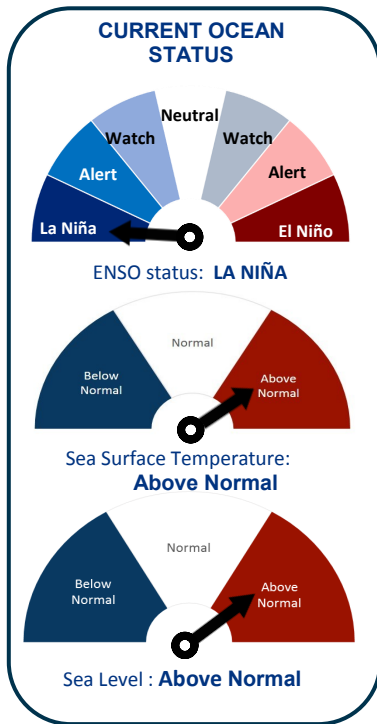
Vanuatu Meteorology & Geo-Hazards Department



November 2020

Issue 18

Ocean Summary:



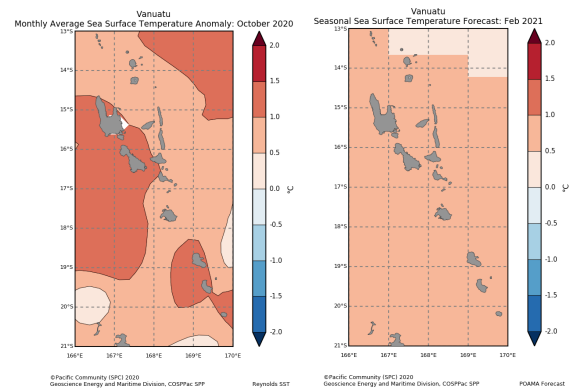
- **LA NIÑA** continues in the tropical Pacific and is likely to continue at least through mid cyclone season. La Niña conditions generally result in above average rainfall over much of Vanuatu. Most oceanic and atmospheric indicators reflect a mature La Niña. Recent variability in the Southern Oscillation Index have been related to the Madden-Julian Oscillation (MJO), rather than the state of the La Niña.
- La Niña is likely to peak in December 2020 or January 2021 at moderate to strong levels. With the upcoming cyclone season which officially runs from 1st November 2020 to 30th April 2021, Vanuatu should expect 2–4 Tropical Cyclones over its area of responsibility. VMGD wishes to advise the general public to remain vigilant and well prepared at all times for any tropical cyclones and La Niña impacts that would follow.
- **Luganville Harbour:** Lowest Tide: 0.16m on 16th November. at 11:58 pm. Highest tide: 1.94m on 15th November at 04:30 am.
- **Port Vila Harbour:** Lowest Tide: 0.14m on 17th November. at 12:46 am. Highest tide: 1.66m on 15th November at 05:20 pm.

Sea Surface Temperatures (SST) Outlook: December 2020 to February 2021

Sea surface temperatures have been above average over the northern region in October. Up to 1.5°C above average SST was observed over Sanma, and parts of Malampa Province. SSTs are expected to remain above normal for the Dec. 2020 to Feb 2021 period.

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

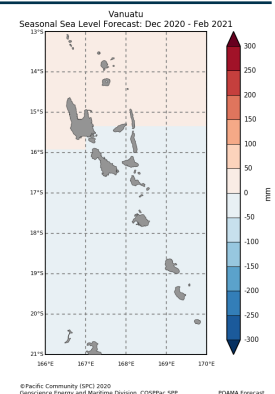


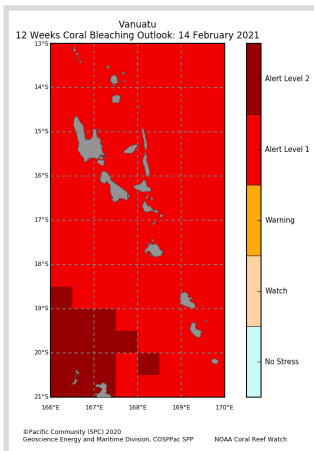
Sea Level (SL) Outlook: December 2020 to February 2021

Sea Level is likely to be slightly above normal over the northern islands, and slightly below normal over the central and southern islands.

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.



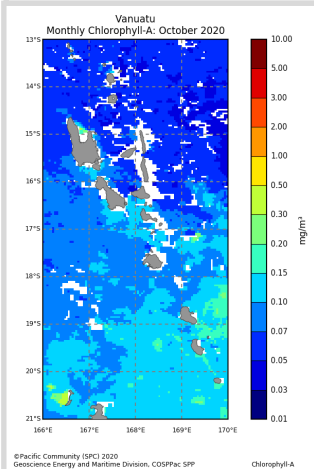


Coral Reef Outlook: February 2020

Risk of coral bleaching is expected to increase over Vanuatu waters within the next three months. A WATCH alert is issued for December 2020, while a WARNING is issued for January 2021. All warnings are expected to increase to ALERT 1 by February 2021. This means significant coral bleaching is likely by February 2021.

Application

- Coral reefs 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.

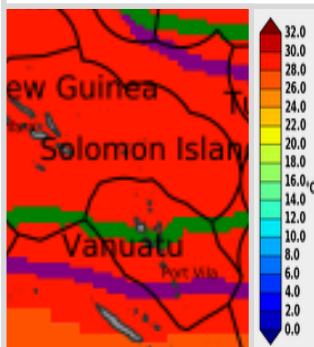


Monthly Chlorophyll

Chlorophyll concentration has decreased over Vanuatu since July 2020. Up to 0.15 mg/m³ 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: 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 December 2020 to February 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)
0.12m	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
0.13m	13 Jan	11:38 pm	1.85m	12 Jan	04:03 pm	0.15	14 Jan	12:25 am	1.57m	12 Jan	04:43 pm
0.16m	27 Feb	11:29 pm	1.77m	27 Feb	04:49pm	0.22m	12 Feb	12:09am	1.51m	11 Feb	05:24 pm

Moon Phases for December 2020 to February 2021

New Moon	First Quarter	Full Moon	Last Quarter
			8 December
15 December	22 December	30 December	6 January
13 January	21 January	29 January	5 February
12 February	20 February	27 February	