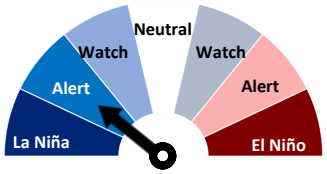
Vanuatu Ocean Outlook

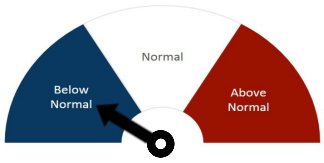
Vanuatu Meteorology & Geo-Hazards Department

August 2020 **Issue 15**

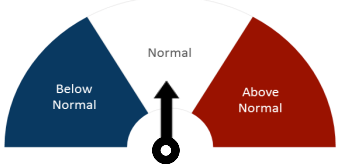
CURRENT OCEAN STATUS



ENSO status: La Niña **ALERT**



Sea Surface Temperature: **Below Normal**



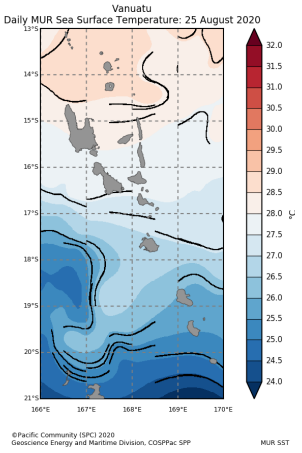
Sea Level : **Normal**

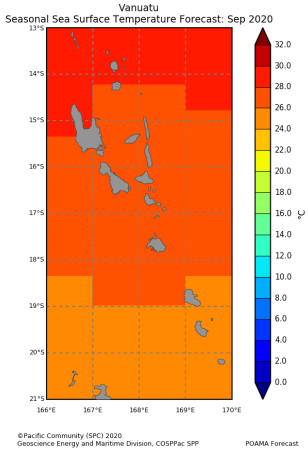
Ocean Summary:

- The ENSO outlook has shifted to **La Niña ALERT**, indicating the chance of La Niña forming in the coming months has increased to 70%. This status change follows sustained cooling in the central and eastern tropical Pacific Ocean, as well as an increase in trade wind strength over the last three months.
- Climate models indicate further cooling is likely, with majority of models suggesting sea surface temperatures will approach or exceed La Niña thresholds during the southern hemisphere spring (September to November).
- A La Niña ALERT is not a guarantee that La Niña will occur, rather it is an indication that most of the typical precursors of La Niña are in place. VMGD will continue to closely monitor the situation for further signs of La Niña development.
- **Luganville Harbour**: *Lowest Tide: 0.15m on 19th August. at 11:11 am. Highest tide: 1.81m on 20th August at 05:08 am.*
- **Port Vila Harbour**: *Lowest Tide: 0.15m on 20th August. at 12:41 pm. Highest tide: 1.49m on 20th August at 05:57 am.*

Sea Surface Temperatures (SST) Outlook: September 2020

SSTs in August ranged from 27°C—29°C in the northern region (Torba, Sanma, Penama, Malampa) to 24°C—26°C in the southern region (Shefa, Tafea). Warm SSTs of 26°C—30°C are forecasted for the northern region in September, and 24°C—26°C are forecasted for the southern region.





Application: Different species of fish are sometimes known to be found at certain temperatures.

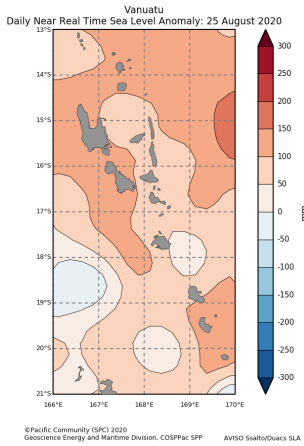
Common name	Species	All occurrences (°C)	Abundant occurrences (°C)
Skipjack	Katsuwonus pelamis	17-30	20-29
Yellowfin	Thunnus albacares	18-31	20-30
Bigeye	T.obesus	11-29	13-27
Albacore	T. alalunga	13-25	15-21
Southern	Bluefin T.maccoyii	10.5-21	17-20

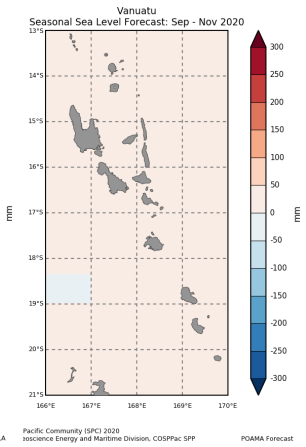
Sea Level (SL) Outlook: September to December 2020

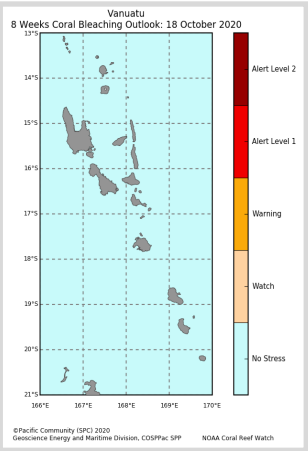
Sea Level has been slightly above normal for most of the country in August. Normal SL is forecasted for Vanuatu in the next three months.

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.





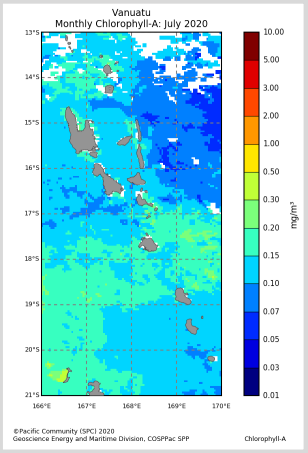


Coral Reef Outlook: October 2020

No stress on Corals is observed over Vanuatu waters in August, and forecast show corals will continue to experience no stress into October. This means there is no potential threat of coral bleaching within the next month.

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).

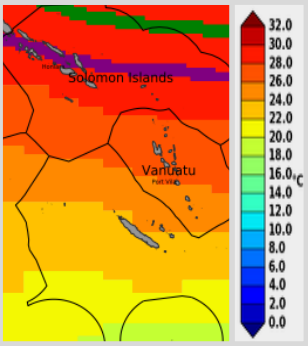


Monthly Chlorophyll

Chlorophyll concentration have slightly decreased over Vanuatu in recent months. Up to 0.30 mg/m^3 of chlorophyll (green colour) are concentrated over Shefa, and offshore the central and northern islands.

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—November 2020

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 Solomon islands in the next three months.

Application:

Along the eastern edge of Warm pool-cold tongue Convengence zone is rich with nutrient which support high abandance of tuna.

Top Highest and Lowest Tides for September 2020 to November 2020: 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)
0.17m	17 Sep	10:41 am	1.82m	18 Sep	04:15 am	0.21m	17 Sep	11:30am	1.57m	19 Sep	19:10 pm
0.24m	19 Oct	12:09 am	1.89m	17 Oct	04:59 am	0.23m	20 Oct	01:50 am	1.63m	17 Oct	05:55 pm
0.16m	16 Nov	11:58 pm	1.94m	15 Nov	04:30 am	0.14m	17 Nov	12:46 am	1.66m	15 Nov	05:20 pm

Moon Phases for September 2020 to November 2020

New Moon ●	First Quarter ◑	Full Moon ○	Last Quarter ◐
		2nd September	10th September
17th September	24th September	2nd October	10th October
17th October	24th October	1st November	9th November
15th November	22nd November	30th November	

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