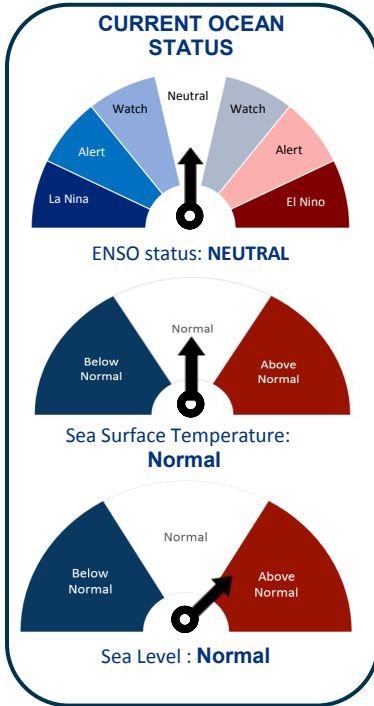




February Ocean Summary:



- The El Niño–Southern Oscillation (ENSO) is neutral.
- The Southern Oscillation Index (SOI) value for the last 30 days ending 15 March was +0.2.
- February began with cooler Sea Surface Temperatures (SST) over the central and southern islands, with temperatures dropping to 1.5°C below average. The remainder of the month sees significant warming, with temperatures reaching up to 1.5°C above average.
- Trade winds were close to average across the tropical Pacific.
- Luganville Harbour : *Lowest Tide: 0.09m on 9th Feb. at 11:32 pm. Highest tide: 1.85m on 9th Feb. at 04:45 pm, and 1.85m on 10th Feb. at 5:30 pm.*
- Port Vila Harbour : *Lowest Tide: 0.17m on 10th and 11th Feb. at 12:24am and 01:06am respectively. Highest tide: 1.57m on 10th Feb. at 6:22pm.*

Ocean Outlook (April 2020 to June 2020)

- Normal to above normal sea surface temperatures are expected over Vanuatu for the next three months. SST anomalies may range from -0.5°C to +1.0°C.
- Normal sea level are expected over Vanuatu within the next three months. Normal sea level anomaly ranges from -50 mm to +50 mm.

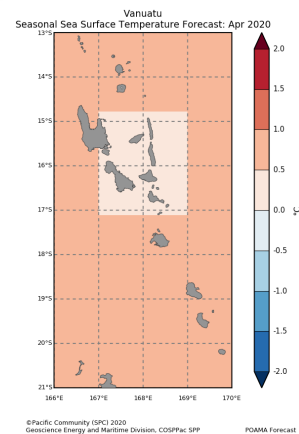
Sea Surface Temperatures

SSTs over Vanuatu in February was normal. Temperatures observed over the northern islands was 29.0°C–30.0°C, and 28.0°C to 29.0°C was observed over the central islands, while the southern islands experienced 27.0°C–28.0°C. Above normal SSTs are forecasted for April 2020.

Application:

Different species of fish are sometimes know 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

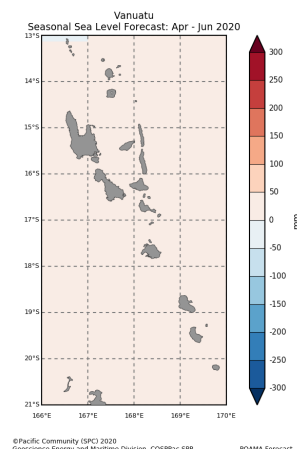


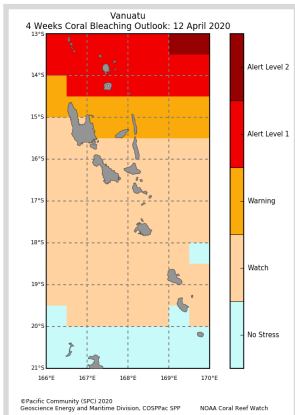
Sea Level

SL level was slightly higher in February, with most of the islands experiencing up to 150mm above its normal height. Normal SL is forecasted for the next three months (April 2020 to June 2020).

Application

- High tides at higher sea level can cause inundation of waves overland (seas-flooding) during bad weather / windy conditions causing rough seas.



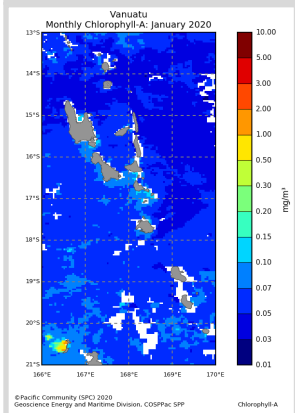


Coral Reef Watch

Coral Reef **Warning** is issued for Vanuatu in March 2020. Coral Reef Outlook for April 2020 shows **Alert level 1** is in place for Torba, **Warning** is in place for North and Eastern Santo, Ambae and Maewo, while **Watch** is in place for the rest of the central and southern islands.

Application

- Coral reef provide food for fishes and shells. When there is coral bleaching, the corals 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).

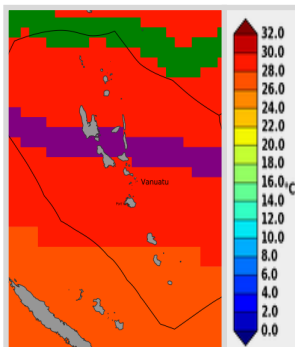


Monthly Chlorophyll

Low chlorophyll concentration (**blue colour**) was observed over Vanuatu waters in January 2020. Latest data for March 2020 shows an increase in chlorophyll concentration over waters along south-western part of Vanuatu. This covers waters to the west of Efate down to Aneityum.

Application

- Fishermen targeting smaller pelagic (open sea) fish may be interested in the chlorophyll concentration.



Sea Surface Temperature With Convergence Zone

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*. In April 2020, *Warm pool-cold tongue Convergence zone* will likely pass over the northern most islands, with its edge extending over the Sanma, Penama and Malampa group.

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 2020 to June 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)
0.15 m	6 Apr	09:59 pm	1.77 m	9 Apr	05:28 am	0.25 m	10 Apr	01:31 pm	1.57 m	9 Apr	06:24 am
0.12 m	8 May	11:34 am	1.79 m	7 May	04:19 am	0.14 m	9 May	01:31 pm	1.55 m	7 May	05:09 am
0.11 m	6 Jun	11:24 am	1.79 m	8 May	04:59 am	0.10 m	6 Jun	12:12 pm	1.51 m	8 May	05:49 am
			1.78 m	5 Jun	03:55 am				1.51 m	4 Jun	03:57 am
									1.51 m	6 Jun	05:21 am

Moon Phases for April 2020 to June 2020

New Moon ●	First Quarter ◐	Full Moon ○	Last Quarter ◑
	1st April	8th April	15th April
23rd April	1st May	7th May	15th May
23rd May	30th May	6th June	13th June
21st June	28th June		