

Ocean Summary:

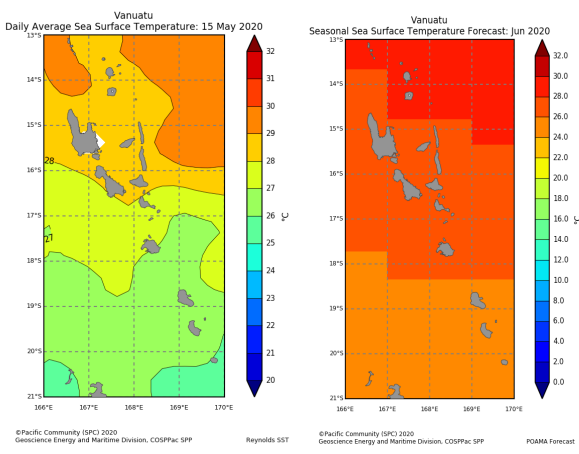
- May marks the beginning of the Vanuatu dry season. The El Niño–Southern Oscillation (ENSO) remains neutral, however some model outlooks suggest a La Niña-like state is possible towards the end of the dry season. The chances of this forecast to actually happen is still low.
- The Southern Oscillation Index (SOI) value for the 30 days ending 10th May was +0.7, and the 90 day value was -3.7. Both values are within the ENSO neutral range.
- Sea surface temperatures reached 29–30 degrees Celsius over Torba, Sanma, Penama and Malampa during the beginning of April. Severe TC *Harold* caused SSTs to drop to 27–28 degree Celsius on April 6th, and warming began again afterwards. As of 15th May, SSTs over Torba, Sanma, Penama and parts of Malampa are currently 28–30 degree Celsius. Elsewhere, SSTs remain below 28 degree Celsius.
- Trade winds for the 5 days ending 10 May were close to average. During El Niño, trade winds tend to weaken. During La Niña, trade winds tend to strengthen.
- Luganville Harbour:** Lowest Tide: 0.12m on 8th May. at 11:34 am. Highest tide: 1.79m on 7th and 8th May at 04:19am and 04:59am respectively.
- Port Vila Harbour:** Lowest Tide: 0.14m on 9th May. at 01:31 pm. Highest tide: 1.55m on 7th and 8th May at 05:09am and 05:59am respectively.

Sea Surface Temperatures (SST)

Forecast for June 2020 shows SSTs over Torba are likely to remain **warmer than normal** (above 28°C). **Normal to slightly warmer than normal** (26°C—28°C) is forecasted for Sanma, Penama, Malampa, and Shefa. While Tafea is likely to experience **cooler** SSTs (below 26°C) during next month.

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

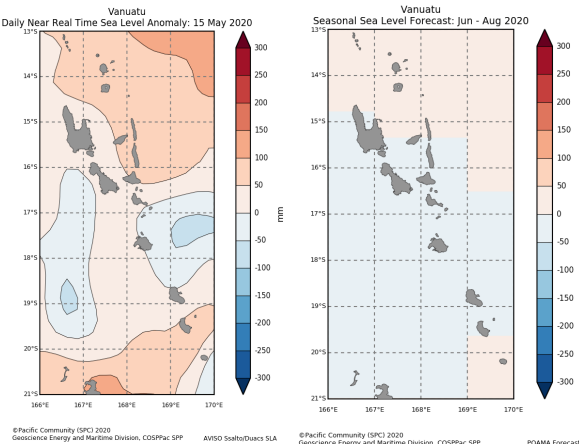


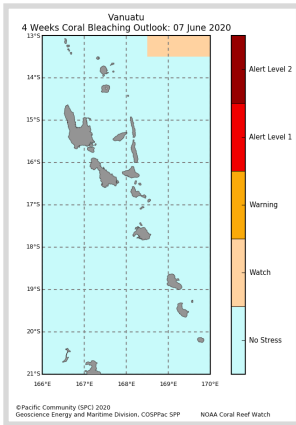
Sea Level (SL) Outlook: June to August 2020

Sea level is likely to be slightly **below normal** (up to 5cm below its normal height) over Sanma, Penama, Malampa, Shefa and Tafea (excluding Aneityum). Elsewhere, slightly **above normal** (up to 5cm above its normal height) is expected.

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.



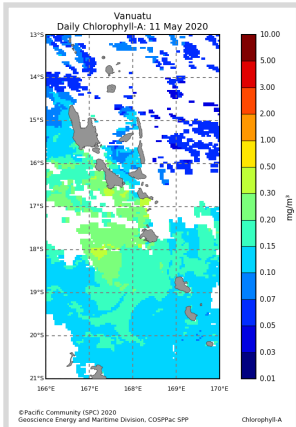


Coral Reef Outlook: June 2020

Torba is still in Coral Reef **Watch** as of May 15th, which means current warm SSTs have caused slight thermal stress on corals, however potential bleaching at this time is low. Elsewhere remains at No Stress. Forecast shows No Stress on corals will likely remain over all islands in Vanuatu for the next 4 weeks until July 7th.

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).

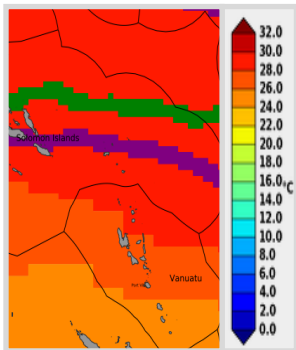


Monthly Chlorophyll

Chlorophyll concentration has been increasing over the Central Waters in recent months. Up to 0.50 mg/m³ of chlorophyll (green colour) were evident over Malekula, Epi, Efate and the Shepherds group as of May 11th.

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: June 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 the Convergence Zone will drift over Solomon islands next 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 June 2020 to August 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)
0.11m	6 June	11:24 am	1.78m	5 June	03:55 am	0.09m	7 June	12:58pm	1.52m	5 June	04:38am
0.14m	5 July	11:15 am	1.74m	4 July	03:41 am	0.11m	5 July	11:59am	1.47m	4 July	04:16am
0.15m	19 Aug	11:11 am	1.81m	20 Aug	05:08 am	0.15m	20 Aug	12:41pm	1.49m	20 Aug	05:57am

Moon Phases for June 2020 to August 2020

New Moon ●	First Quarter ◐	Full Moon ○	Last Quarter ◑
		6th June	13th June
21st June	28th June	5th July	13 July
21 July	27 July	4th August	12th August
19th August	26th August		