

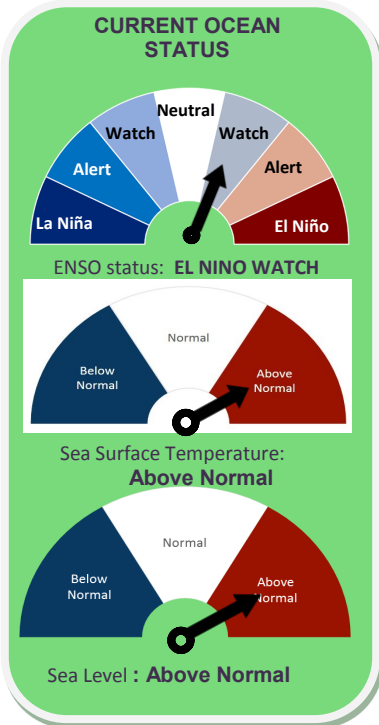
Vanuatu Ocean Outlook

Vanuatu Meteorology & Geo-Hazards Department



MAY

Issue 44



Ocean Summary:

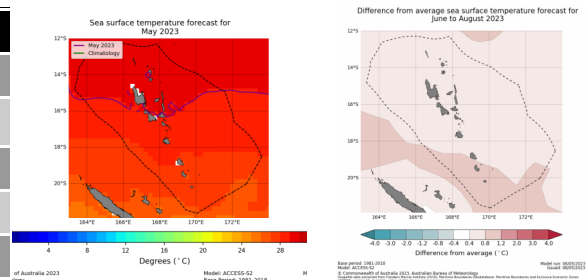
- The ENSO Outlook is currently neutral however there are signs that El Niño will form later this year, this means there is a 50% chance of El Niño in 2023 therefore ENSO status was raised to WATCH.
- The 30-day Southern Oscillation Index (SOI) for the 30 days ending 24 April 2023 was -3.6 , while the 90-day SOI value was $+3.6$. The 30-day SOI has slightly decreased over the past fortnight and continues to be negative. SOI below -7 typically indicate El Niño while sustained positive values above $+7$ typically indicate La Niña. Values between $+7$ and -7 generally indicate neutral conditions.
- Trade winds for the 5 days ending 23 April 2023 were close to average over most of tropical Pacific. During El Niño there is a sustained weakening
- For the week ending 23 April 2023, sea surface temperatures (SST) were warmer than average over the eastern equatorial Pacific ocean.
- Loganville Harbor:** Lowest Tide: 0.22m on 7 May at 05:am. Highest tide: 1.68m on 19 May at 04:06am.
- Port Vila Harbor:** Lowest Tide: 0.19m on 20 May at 12:23pm Highest tide: 1.46m on 18 May at 04:20am.

Sea Surface Temperatures (SST) Outlook: May (monthly) and May to July 2023 (seasonally) 2023

- The monthly average sea surface temperature for Vanuatu in May 2023 is expected to be above average for all Vanuatu regions. (Northern, central and southern region).
- The seasonal sea-surface temperature forecast outlook from June to August 2023 is expected to be above average with a difference of 1.2°C across northern and central and 2.0°C for southern region.

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

Common name	Species	All occurrences ($^{\circ}\text{C}$)	Abundant occurrences ($^{\circ}\text{C}$)
Skipjack	Katsuwonus pelamis	17-30	20-29
Yellow fin	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

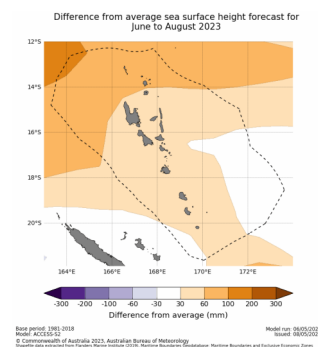


Sea Level (SL) Outlook: May to July 2023

Seasonal sea level outlook forecast by climate models from June to August 2023, indicates above average, with average difference of 100mm sea level over all islands of Vanuatu except Torba province with 200mm difference.

Application

- High tides at higher sea level could cause inundation of wave overland (seas-flooding), also contributing to coastal erosion. 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.



4 weeks Coral Reef Bleaching Outlook: 28 May 2023

The expected coral bleaching outlook for Vanuatu in the next 4 weeks up to 28 May 2023, Shows warning alert for Part of northern region(Torba province, north Santo, north Pentecost. No stress is expected across the rest of the country.

Application.

- Coral reef protect coastal areas by reducing waves, and also provide food for fishes and shells. When coral bleaching occur corals die, thus affecting the whole food chain and underwater ecosystem.
- 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).

Daily Chlorophyll A 02 May 2023

The Daily ocean Chlorophyll concentration forecast on 02 May 2023 shows absence of chlorophyll concentration in all islands of Vanuatu from north to south.

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.

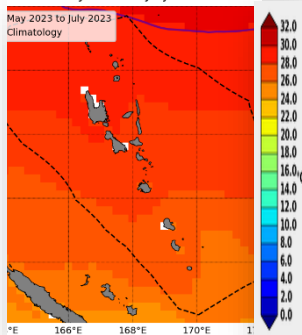
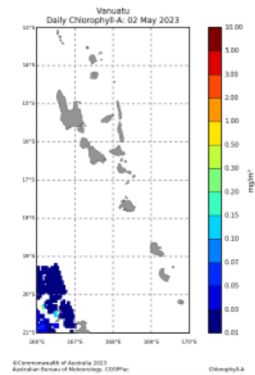
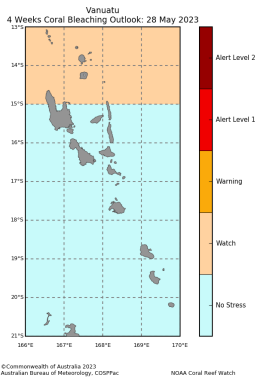
The Convergence Zone Outlook May to July 2023

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*.

Outlook for June to August forecast shows the location of the warm pool extended across southern Solomon islands and the edge of the warm pool is expected to move northwards of Vanuatu towards Solomon.

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 to August 2023: Luganville & Port Vila Harbor

Luganville Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.13m	5 Jun	11:51pm	1.71m	5 June	04:55am
0.07m	4 Jul	11:43pm	1.78m	4 July	11:43am
0.05m	2 Aug	11:27am	1.90m	31 Aug	04:25am

Port Vila Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.09m	6 June	1:27pm	1.45m	4 June	05:00am
0.04m	5 July	06:19am	1.47m	4 July	05:28am
0.05m	2 Aug	12:13 pm	1.55m	31 Aug	05:09am

Moon Phases for March to May 2023

New Moon	First Quarter	Full Moon	Last Quarter
20 May	28 May	6 May	13 May
18 June	26 June	4 June	11 June
		3 Jul	10 Jul

Contact Us: Call: (+678 23866), Free Toll: 116, Email: climate@meteo.gov.vu, visit: vmgd.gov.vu