

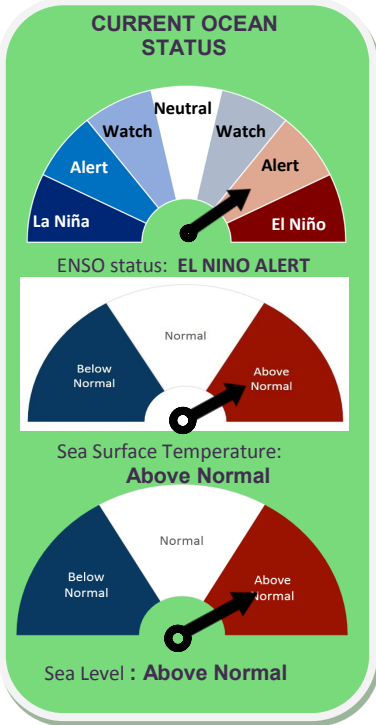
Vanuatu Ocean Outlook

Vanuatu Meteorology & Geo-Hazards Department



JUNE

Issue 45



Ocean Summary:

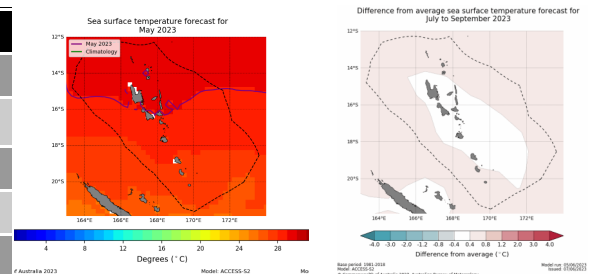
- The ENSO Outlook has been shift to El Niño ALERT, indicating a 70% chance of El Niño forming this year.
- The 30-day Southern Oscillation Index (SOI) for the 30 days ending 4 June 2023 was -20.5 , while the values for the 60-day SOI was -10.6 and the 90-day SOI was -7.1 . Both the 30-day and the 90-day SOI have seen a steady decreasing trend over the past month. 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 4 June 2023 were close to average over most of the 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 in the south west, south, and central pacific.
- Loganville Harbor:** *Lowest Tide: 0.13m on 5 June at 11:51:am. Highest tide: 1.71m on 5 June at 04:55am.*
- Port Vila Harbor:** *Lowest Tide: 0.09m on 6 June at 1:27am Highest tide: 1.45m on 4 June at 05:00am.*

Sea Surface Temperatures (SST) Outlook: May (monthly) and July to September (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). However the temperature is slowly decreasing as warm pool is moving eastwards.
- The seasonal sea-surface temperature forecast outlook from July to September 2023 is expected to be Near average in most of the Vanuatu islands except Torba province and part of Tafea Province which is expecting above average SST.

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

Common name	Species	All occurrences (°C)	Abundant occurrences (°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

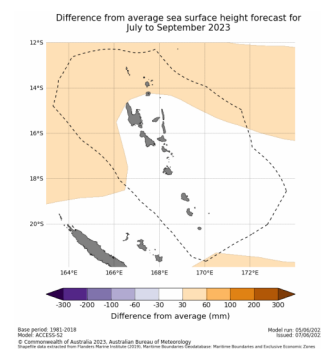


Sea Level (SL) Outlook: July to September 2023

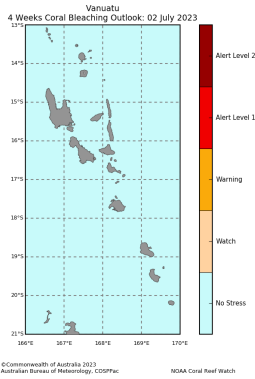
Seasonal sea level outlook July to September 2023, shows above average in Torba province with difference of 60mm and Near average in the rest of the country with difference of 30mm.

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 until 02 July 2023

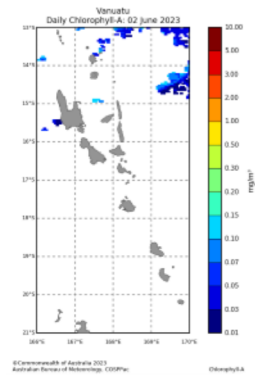


The 4 weeks coral bleaching outlook until 02 July shows No Stress in coral bleaching activity for the whole country.

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 June 2023

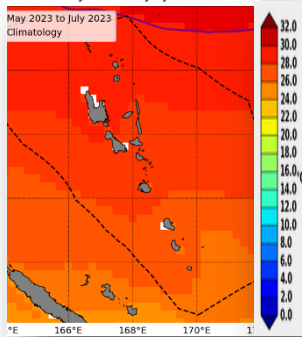


The Daily ocean Chlorophyll concentration issue on 02 June 2023 shows very small concentration of chlorophyll forming in the northern waters and absence in the rest of the country.

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 July to September 2023: Luganville & Port Vila Harbor

Luganville Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.07m	4 Jul	11:43pm	1.78m	4 July	11:43am
0.05m	2 Aug	11:27am	1:90m	31 Aug	04:25am
0.13m	1 Sept	11:42am	1.89m	1 Sept	05:11am

Port Vila Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
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
0.15m	1 sept	12:30pm	1.58m	30 Sept	12:00pm

Moon Phases for 18 June to 7 September 2023

New Moon	First Quarter	Full Moon	Last Quarter
18 June	26 June	3 July	10 July
18 July	26 July	2 August	8 August
16 August	24 August	31 August	7 September

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