

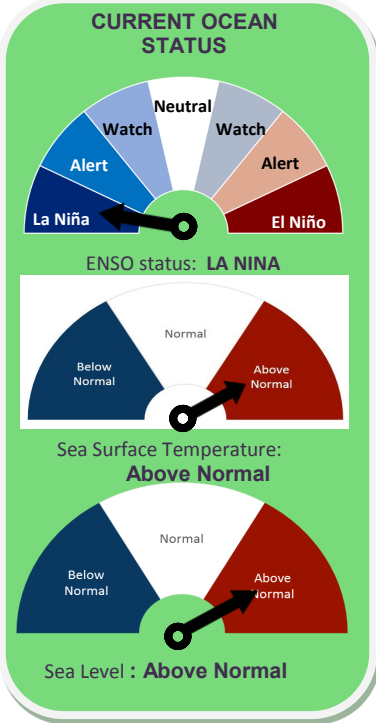
Vanuatu Ocean Outlook

Vanuatu Meteorology & Geo-Hazards Department



October 2022

Issue 41



Ocean Summary:

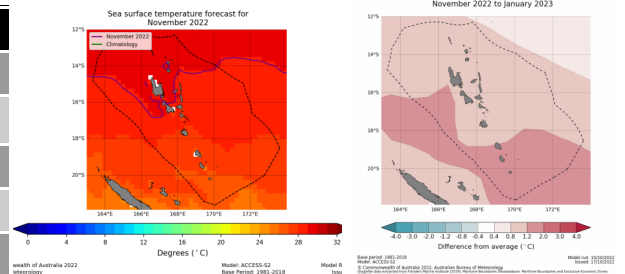
- The Bureau's ENSO Outlook has been raised to La Niña. La Niña events increase the chances of above-average rainfall in Vanuatu.
- The 30-day Southern Oscillation Index (SOI) for the 30 days ending 9 October 2022 was +19.2. The 90-day SOI value was +13.4. SOI below -7 typically indicate El Niño while 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 9 October 2022 were slightly stronger than average across western half of tropical Pacific. In a La Niña, there is sustained strengthening Trade wind across much of the Pacific.
- For the week ending 9 October 2022, sea surface temperatures (SST) in the tropical Pacific Ocean were cooler than average along much of the equator. Cool SST anomalies were strongest in south of the equator in much of the central and eastern Pacific
- Loganville Harbor:** Lowest Tide: 0.18m on 26 November at 00:11am. Highest tide: 1.88m on 24 November at 16:34am.
- Port Vila Harbor:** Lowest Tide: 0.14m on 26 November at 00:59am Highest tide: 1.59m on 24 November at 17:24pm.

Sea Surface Temperatures (SST) Outlook: November (monthly) and November to January (seasonally)

- The monthly average sea surface temperature anomaly for Vanuatu in November 2022 is expected to be above average for all Vanuatu regions (Northern, central and southern region).
- The seasonal sea-surface temperature forecast outlook for November to January 2023 is also expected to be above average over the whole country.

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

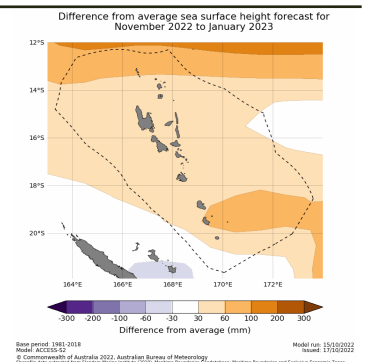


Sea Level (SL) Outlook: November to January 2023

Seasonal sea level outlook forecast by climate models from November to January 2023, indicates above average, with average difference of 60mm sea level over most of Vanuatu ocean waters.

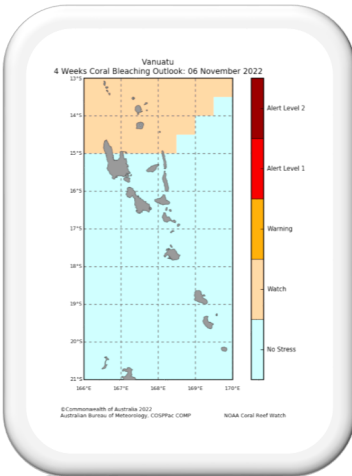
Application

- 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.



Model: ACCESS1-2
Base period: 1981-2018
Model run: 15/10/2022
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4 weeks Coral Reef Bleaching Outlook: 06 November 2022

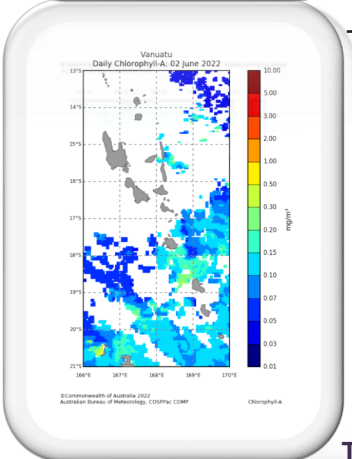


The expected coral bleaching outlook for Vanuatu in the next 4 weeks up to 06 November 2022, Shows watch alert level developed over Torba province extending towards north of Sanma and Penama. No thermal stress alert level is show for other provinces.

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 eco-system.
- 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 for 02 June 2022

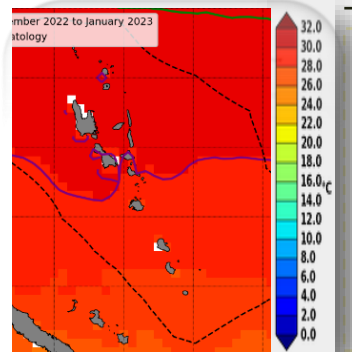


The Daily ocean Chlorophyll concentration forecast for 2nd of June 2022 shows signs of absence especially over northern region islands and great decrease in chlorophyll concentration in the central and southern region island groups.

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 November to January 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*.

From November to January, forecast shows that the edge of warm pool extended across waters of Malampa province.

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 October to December 2022: Luganville & Port Vila Harbor

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)
0.27m	8 oct	09:43am	1.81m	26 Oct	17:00pm	0.25m	28 Oct	01:12am	1.55m	26 Oct	17:57pm
0.18m	26 Nov	00:11am	1.88m	24 Nov	16:34pm	0.14m	26 Nov	00:59am	1.59m	24 Nov	17:24pm
0.09m	25 Dec	00:04am	1.90m	23 Dec	16:20pm	0.09m	25 Dec	00:50am	1.60m	23 Dec	17:03pm

Moon Phases for September to December 2022

New Moon	First Quarter	Full Moon	Last Quarter
26 September	3 October	10 October	18 October
25 October	1 November	8 November	17 November
24 November	1 December	8 December	16 December