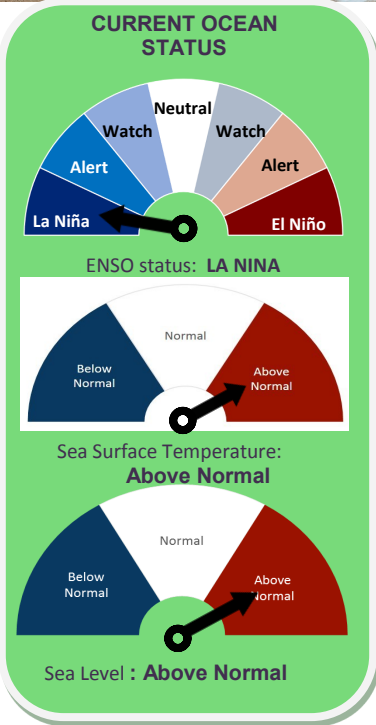


Vanuatu Ocean Outlook

Vanuatu Meteorology & Geo-Hazards Department

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Issue 42



Ocean Summary:

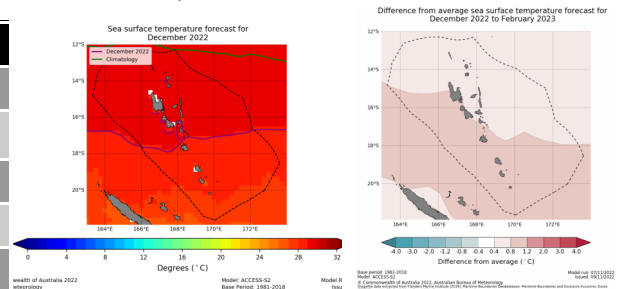
- The Bureau's [ENSO Outlook](#), La Niña continues in the Pacific. La Niña events increase the chances of above-average rainfall in Vanuatu.
- The 30-day Southern Oscillation Index (SOI) for the 30 days ending 6 November 2022 was +11.1. The 90-day SOI value was +13.5. SOI below -7 typically indicate 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 6 November 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 6 November 2022, sea surface temperatures (SST) in the tropical Pacific Ocean were cooler than average across central and eastern Pacific. This indicates a La Niña event.
- Loganville Harbor:** Lowest Tide: 0.09m on 25 December at 00:04am. Highest tide: 1.90m on 23 December at 16:20am.
- Port Vila Harbor:** Lowest Tide: 0.25m on 25 December at 00:50am Highest tide: 1.60m on 23 December at 17:03pm.

Sea Surface Temperatures (SST) Outlook: December (monthly) and December to February 2023 (seasonally)

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

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
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

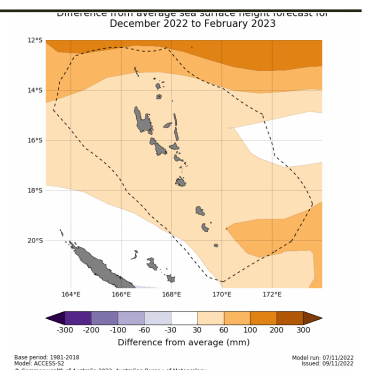


Sea Level (SL) Outlook: December to February 2023

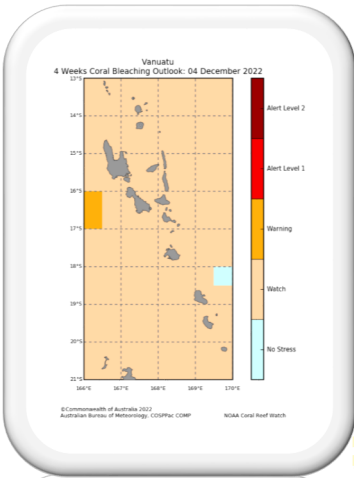
Seasonal sea level outlook forecast by climate models from December to February 2023, indicates above average, with average difference of 30-60mm sea level over most of Vanuatu ocean waters.

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.



4 weeks Coral Reef Bleaching Outlook: 04 December 2022

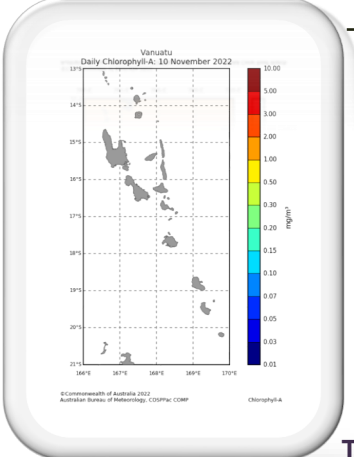


The expected coral bleaching outlook for Vanuatu in the next 4 weeks up to 04 December 2022, Shows watch alert level developed and extending throughout all of Vanuatu islands.

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 for 10 November 2022

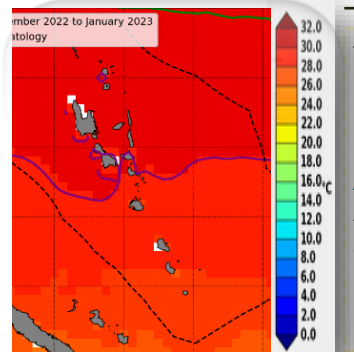


The Daily ocean Chlorophyll concentration forecast on 10 November 2022 shows signs of absence of chlorophyll concentration in All regions of Vanuatu Ocean water.

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