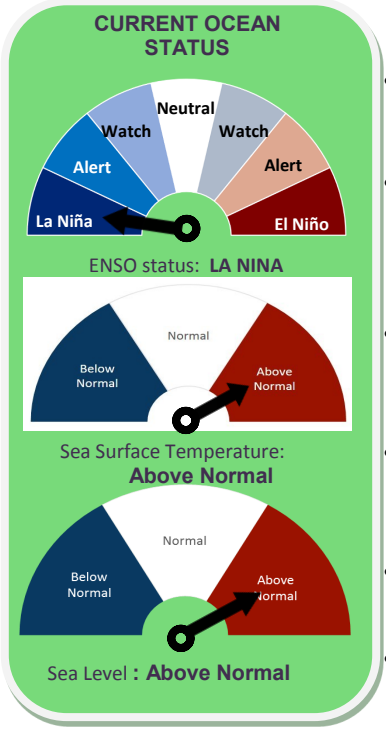
Vanuatu Ocean Outlook

Vanuatu Meteorology & Geo-Hazards Department

May 2022 | **Issue 36**



Ocean Summary:

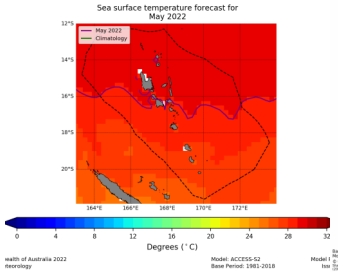
- The ENSO outlook is La Nina . The 2021–22 La Niña continues in the tropical Pacific, with little change in strength in the past few weeks. With a weak La Nina, it continues to influence the global weather and climate.
- he 30-day Southern Oscillation Index (SOI) for the 30 days ending 8 May 2022 was +20.7. The 90-day SOI value was +14.2. 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 8 May 2022 were slightly stronger than average over the central and western tropical Pacific. Trade winds have generally been stronger than average in recent months.
- Sea surface temperature for tropical pacific ocean for the week ending 8 May were cooler than average along and just south of the equator over most of the central and eastern Pacific Ocean, extending along the coastline of South America. .
- Loganville Harbor: *Lowest Tide: 0.11m on 17 may at 11:46am. Highest tide: 1.77m on 17 May at 04:59pm.*
- Port Vila Harbor: *Lowest Tide: 0.10m on 18 May at 13:25pm Highest tide: 1.51m on 16 May at 05:10am.*

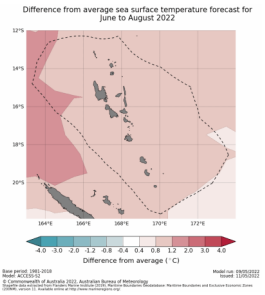
Sea Surface Temperatures (SST) Outlook: May (monthly) and June to August (seasonally) 2022

- The monthly average sea surface temperature anomaly for Vanuatu in may 2022 is expected to be above average for all region of Vanuatu (Northern , central and southern region).
- The seasonal sea-surface temperature forecast outlook for June to August 2022 is expected to be above average in all ocean water of the country from northern to the southern region.

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



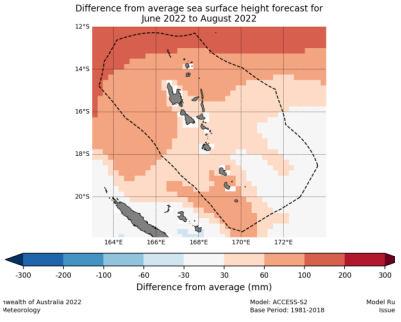


Sea Level (SL) Outlook: June to August 2022

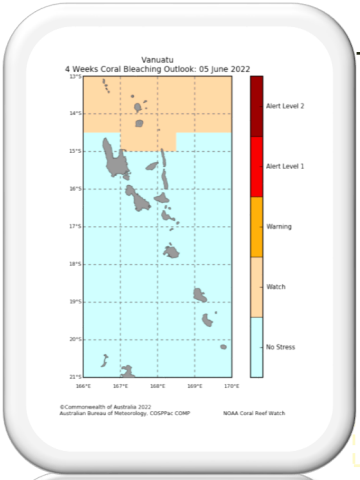
Seasonal sea level outlook forecast by models from June to August 2022, shows above average sea level expected in all regions of Vnuatu.

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: 5 June 2022

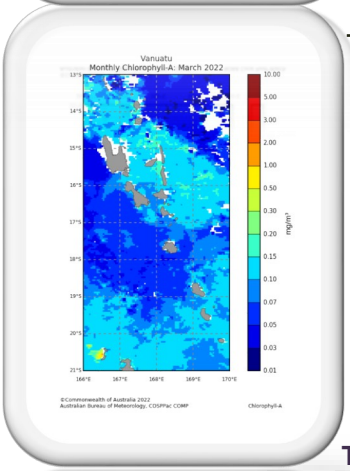


The expected coral bleaching outlook for Vanuatu in the next 4 weeks up to 5 June 2022, indicates Watch Alert for Torba Province while no stress is recorded elsewhere.

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).

Monthly Chlorophyll for March 2022

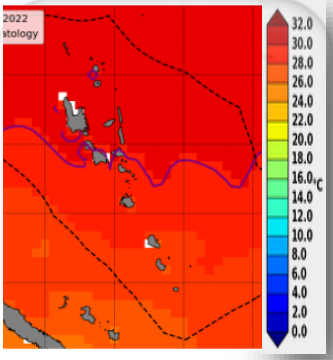


The monthly ocean Chlorophyll concentration forecast for March shows signs of shlorophyll de-crease in chlorophyll concentrations (below 0.10 mg/m3) over all Vanuatu waters.

Application.

- Fishermen targeting smaller pelagic (open sea) fish, may be interested in the chlorophyll con-centration.
- 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 concentra-tions.

The Convergence Zone Outlook: May to July 2022



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 that the edge of warm pool will be experience over the malampa waters from May to July.

Application:
Along the eastern edge of Warm pool-cold tongue Convengence zone is rich with nutrient which support high abandance of tuna.

Top Highest and Lowest Tides for May to July 2022: Luganville & Port Vila Harbor

Luganville Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.05m	15 Jun	11:39am	1.80m	15 Jun	04:44am
0.03m	14 Jul	11:30am	1.84m	14 Jul	04:36am
0.06m	12 Aug	11:13am	1.87m	12 Aug	04:28am

Port Vila Harbour					
Lowest Tide	Date	Time (VUT)	Highest Tide	Date	Time (VUT)
0.03m	16 Jun	13:15pm	1.51m	14 Jun	04:40am
0.02m	15 Jul	13:02pm	1.51m	14 Jul	05:15am
0.07m	12 Aug	11:58am	1.53m	13 Aug	05:59am

Moon Phases for April to June 2022

New Moon ●	First Quarter ◑	Full Moon ○	Last Quarter ◑
1st May	9 May	16 May	23 May
30 may	8 June	14 June	21 June
29 June	7 July	14 July	21 July