



# Tonga Ocean Outlook

Issue: 04

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## TONGA METEOROLOGICAL SERVICE

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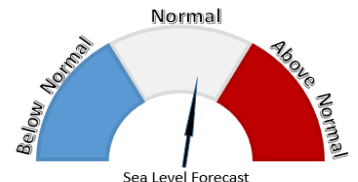
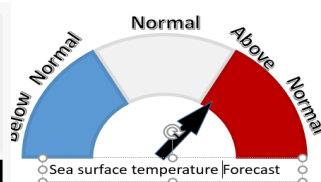
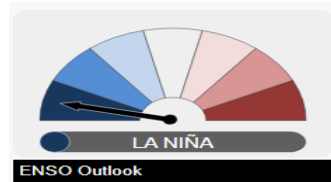
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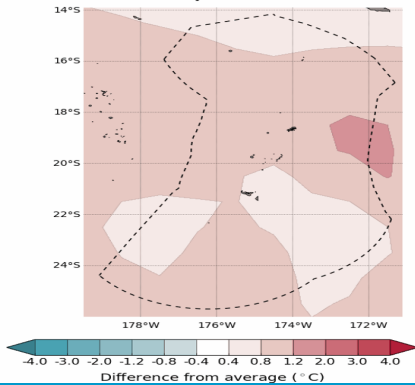
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- La Niña remains active but gradually easing.
- Above normal sea surface temperatures (SSTs) between 0.8 to 1.2°C is favoured for central to northern Tonga.
- Average sea level (>100 mm) is favoured for most of Tonga in May.
- The fisheries convergence zone is predicted to be far north of Tonga in the next few months.
- Next extreme highest and lowest tides will be on 18<sup>th</sup> May at height of 1.8m, lowest tide will be 0.26m.



## Sea Surface Temperature Forecast

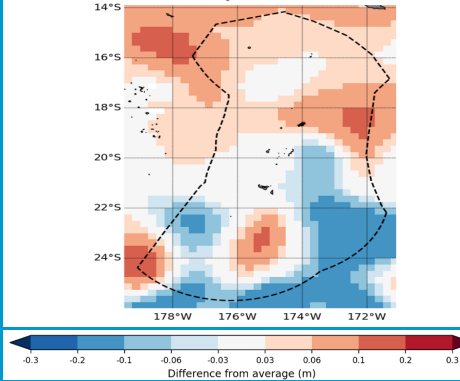
Difference from average sea surface temperature forecast for May 2022



Sea surface temperature forecast for May 2022 shows above average across the country except for Tongatapu waters where its average. Presence of warmer or cooler waters than usual indicates whether El Niño or La Niña like pattern is likely during the forecast period or monitoring warm patches of warm waters which gives insight into the potential for cyclone formation.

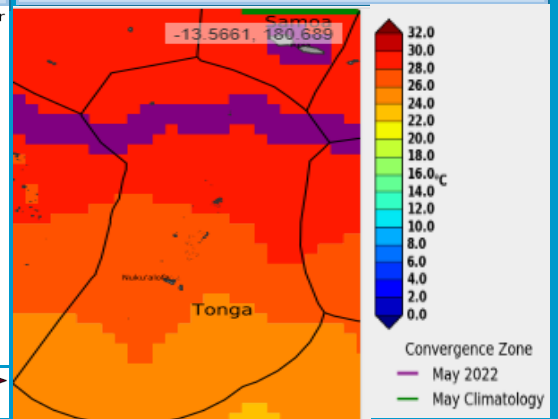
## Sea-level Forecast

Difference from average sea surface height forecast for May 2022



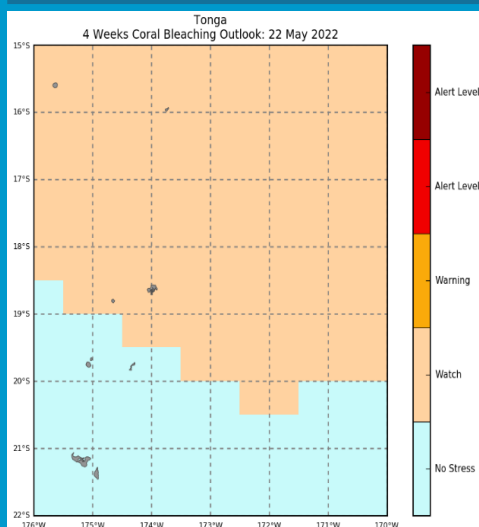
Sea level anomaly monthly forecast shows just around average sea surface height across Tonga waters and to the north. Stakeholders can use this forecasts to make decisions about the protection of communities and infrastructure against coastal inundation.

## Nutrient Zone Forecast



The boundary between warm and cold ocean water is rich in nutrients and attracts Tuna. This convergence zone is normally located far north of Tonga during this time of year (green line). The average for May 2022 lies over the Niuaus.

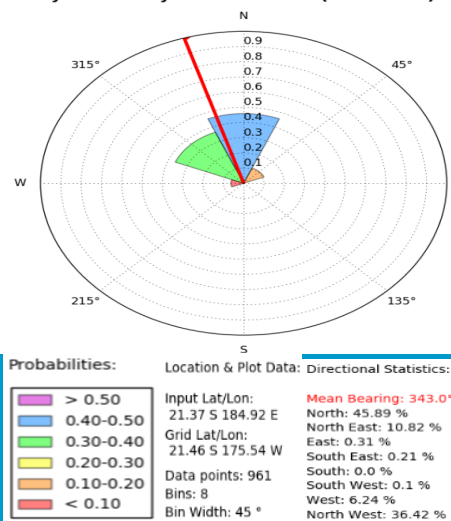
## Monthly Coral Bleaching



May's coral bleaching outlook shows no thermal stress over Tongatapu and Ha'apai and bleaching-watch level for Vava'u up to the Niuaus. The bleaching intensities given are representative of ecosystem impacts for most coral reef communities. Coral species more susceptible to thermal stress may experience bleaching during a Bleaching Warning, while resistant species may only bleach during Alert Level 2.

## Monthly Wave Direction

May mean daily wave direction (1979-2009)



Nuku'alofa wave climate for the month of May shows majority of the waves to come from the south east going toward the northwest direction. This has been the average direction for the past 30 years. The average wave height for this location in May is 2.5m with the possibility of waves reaching as high as 6.1m.

## The highest tide predicted for 2022

10 highest tides for 2022			10 lowest tides for 2022		
Date	Time	Height (m)	Date	Time	Height (m)
3-Jan	19:48	1.88	15-Jul	14:45	0.17
4-Jan	20:45	1.88	16-Jul	15:37	0.19
2-Jan	18:52	1.86	14-Jul	13:51	0.19
1-Feb	19:34	1.86	16-Jun	15:00	0.19
25-Dec	20:59	1.86	17-Jun	15:56	0.2
2-Feb	20:30	1.86	13-Aug	14:26	0.2
24-Dec	20:03	1.85	12-Aug	13:34	0.21
5-Jan	21:41	1.85	15-Jun	14:07	0.22
26-Dec	21:55	1.84	14-Aug	15:16	0.23
31-Jan	18:37	1.84	17-Jul	16:30	0.24

2021 Tidal predictions show the highest tides of the year for Nuku'alofa. The next highest tide coming up on the 18th May with a height of 1.8m. The next lowest tide is again on the 18th May with a height of 0.26m.