



# Kiribati Ocean Outlook August to October 2023



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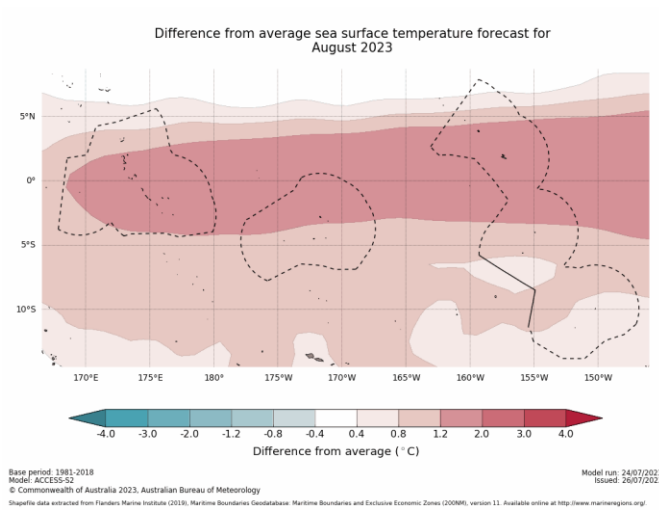
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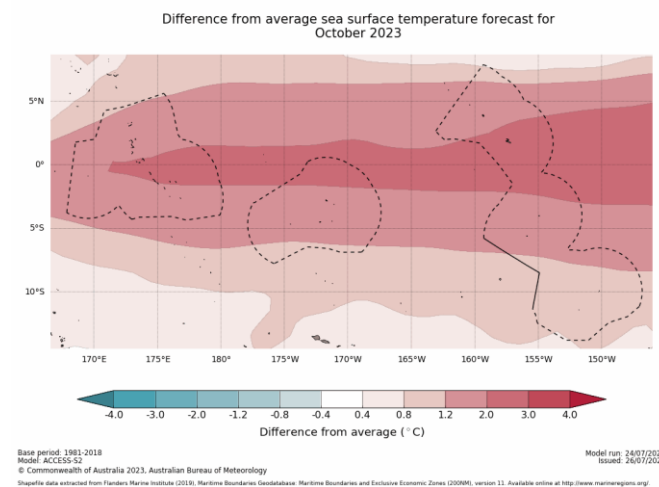
# Summary

- ❖ Warmer than average sea surface temperature expected for all the islands in the Kiribati region within the next three months, August to October.
- ❖ The upwelling zone is forecasted to cover the Kiribati region for the months of August to October, thus these areas are more favorable to migratory fishes like tuna.
- ❖ Most islands from the Gilbert and Line Groups are expected to be on Alert Level 1 and Warning Level while the Phoenix group is expected to be on Watch level.
- ❖ The seasonal sea level for the Central and some parts of the Southern Gilbert group and Kiritimati are anticipated to increase by 30 to 60mm (0.03-0.06m).
- ❖ The highest extreme spring tide within the next three months August to October 2023 will fall on **1<sup>st</sup> September at 05:12am in the morning with height of 2.97m.**

# Sea Surface Temperature (SST)



**Figure 1:** SST for August 2023



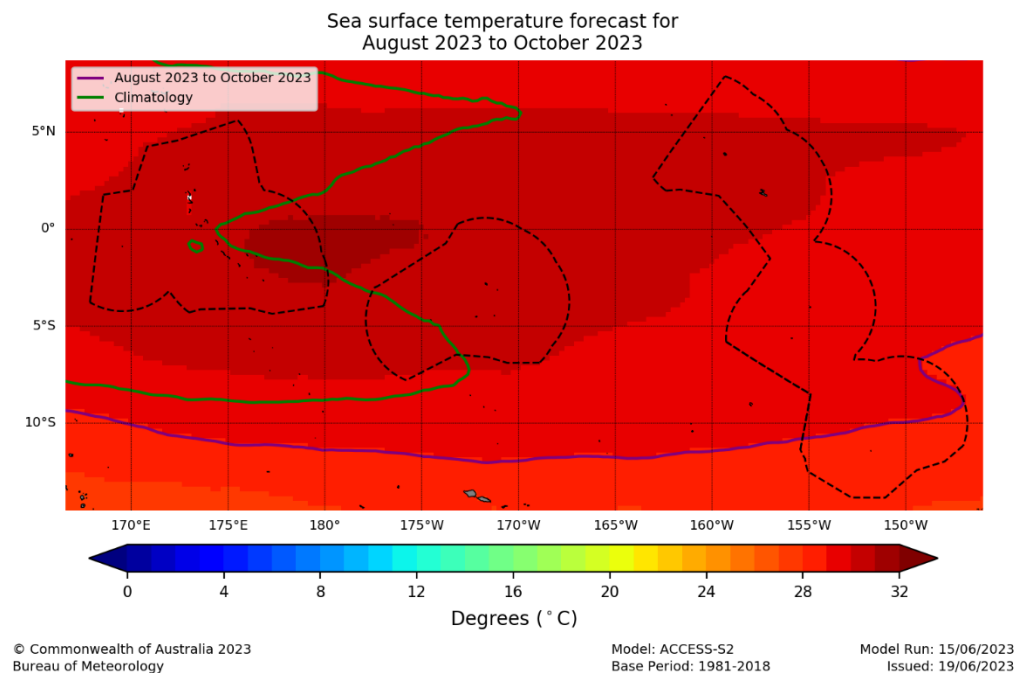
**Figure 2:** SST for October 2023

The two images show sea surface temperature (SST) variation in the Kiribati region for the months of August to October 2023.

For figure 1, the current sea temperature for August is significantly warmer than average (1.2 to 2.0°C) for most islands in the Gilbert and northern Phoenix and Line groups. The rest of the islands are slightly warmer by 0.4 to 0.8°C.

For figure 2, the sea surface temperature is forecasted to be warmer than average ranging from 0.4°C to 3.0 °C in the upcoming months for the Kiribati region.

# Upwelling zone based on Sea Surface Temperature

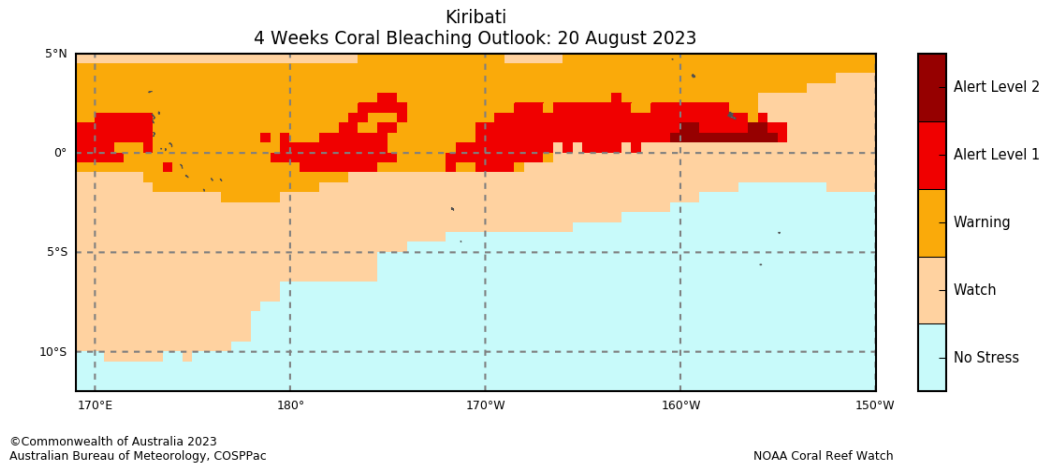


The upwelling zone shows the position of the nutrient rich area where migratory fishes like tuna species are likely to be dominant in.

On the map given above, it reveals zones that are shaded by a purple line represents the current month in forecast (August 2023), and the green line represents the normal position of the zone during the same month in the past.

The normal position (green line) of the upwelling zone lies over the Gilbert Group and extends to the South west of the Phoenix group, however in the current forecasted position, it covers the whole of the island groups (Gilbert, Line and Phoenix Groups), so Kiribati waters are now highly favorable for migratory fishes like tuna for months of August to October 2023.

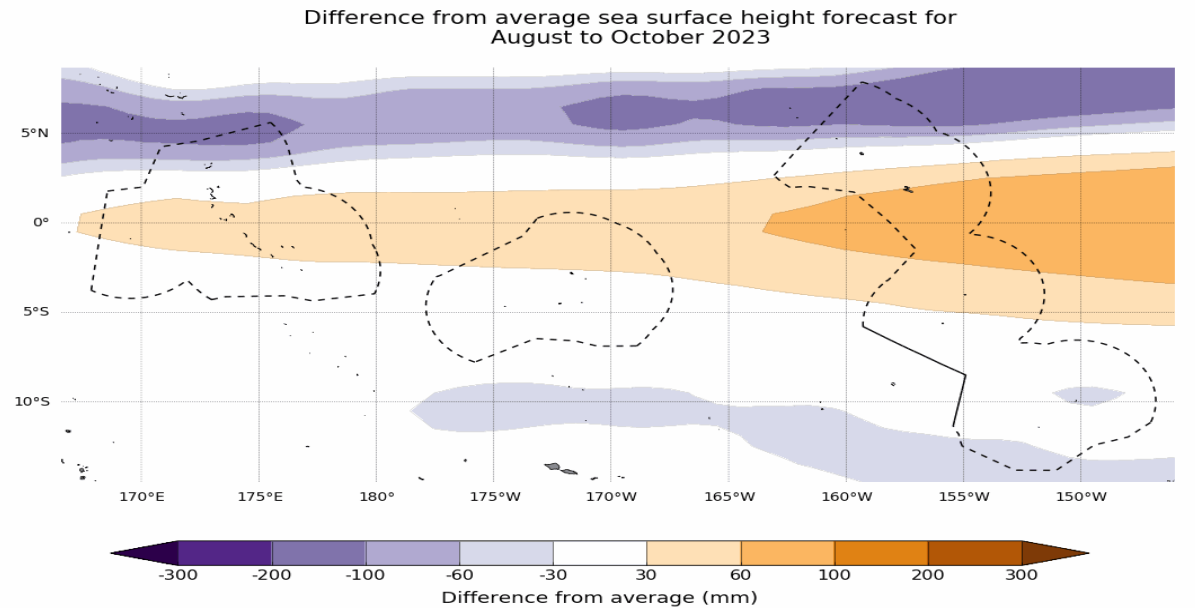
# Coral Bleaching



The coral bleaching outlook for the 4 weeks as provided above, it shows that most of the islands in the Gilbert and Line Group are expected to be on Alert Level 1 and warning level while the Phoenix Group is expected to be on Watch level. Thus, the public are encouraged to take precautionary measures to lessen possible impacts especially for scuba divers, snorkelers, fishermen, surfers, and other leisure activities.

**Note:** This forecast is based only on the Sea surface temperature, thus verification from MFMRD on coral conditions is required. Local environmental conditions can also contribute towards the bleaching process.

# Seasonal Sea Level Forecast



Base period: 1981-2018

Model: ACCESS-S2

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Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marinerregions.org/>

Model run: 24/07/2023

Issued: 26/07/2023

The seasonal sea level for the Central Gilbert and Line groups and northern Phoenix group are anticipated to increase by 30 to 100mm (0.03-0.1m). However, the rest of the island are expected to be near normal while the northernmost islands in the Gilbert and Line groups are likely to decrease in their sea level by 30 to 60mm (0.03 to 0.06m).

# Extreme Spring Tide Prediction

MONTH	DATE	TIME	HEIGHT(M)	MOON PHASE
August	2 <sup>nd</sup>	0449AM	2.86	Full Moon
	3 <sup>rd</sup>	0532AM	2.91	
	4 <sup>th</sup>	0615AM	2.87	
	30 <sup>th</sup>	0353AM	2.82	
	31 <sup>st</sup>	0433AM	2.94	
September	<b>1<sup>st</sup></b>	<b>0512AM</b>	<b>2.97</b>	
	2 <sup>nd</sup>	0549AM	2.91	
	28 <sup>th</sup>	0332AM	2.84	
		0410AM	2.92	
	30 <sup>th</sup>	1631PM	2.84	
		0445AM	2.90	
	1705PM	2.87		
October	1 <sup>st</sup>	0520AM	2.80	
		1739PM	2.83	
	28 <sup>th</sup>	1605PM	2.86	
	29 <sup>th</sup>	1639PM	2.87	
	30 <sup>th</sup>	1713PM	2.82	

The table above shows extreme spring tides expected for the months of August to October 2023. The next highest spring tide will be on the **1<sup>st</sup> of September with height of 2.97m at 05:12am** in the morning.

These heights may increase when coincide with the increase of sea level from sea surface temperature (refer to map on page 6) and can also cause damages and inundation if associated with gusty and strong winds. Thus, those who live along the coastal areas are encouraged to take precautionary measures to minimize possible threats.