



# Kiribati Ocean Outlook

## February to April 2023



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# Summary

- ❖ Cool waters are expected to remain over the Phoenix and Line Group for February 2023. However, most parts of the Kiribati group will be expecting normal sea surface temperatures in early April 2023.
- ❖ The upwelling zone is predicted to be near southern EEZ of the Gilbert group.
- ❖ The Gilbert group is expected to be on “Watch” while the rest of the Kiribati groups are expected to have no thermal stress.
- ❖ All island groups are forecasted to be near-normal in their sea level, however an increase of 60 to 100mm is detected at the northern islands of the Gilbert group.
- ❖ The highest spring tide within the three months period is expected to fall on the 20<sup>th</sup> (05.00pm) and 21<sup>st</sup> (05.38pm) of February with height of 2.96m.

# Sea Surface Temperature (SST)

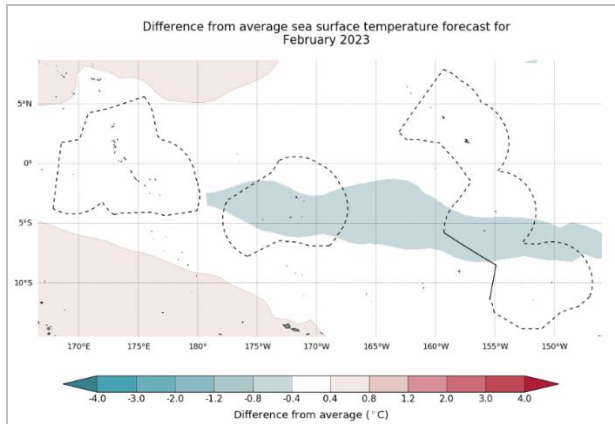


Figure 1: SST for February 2023

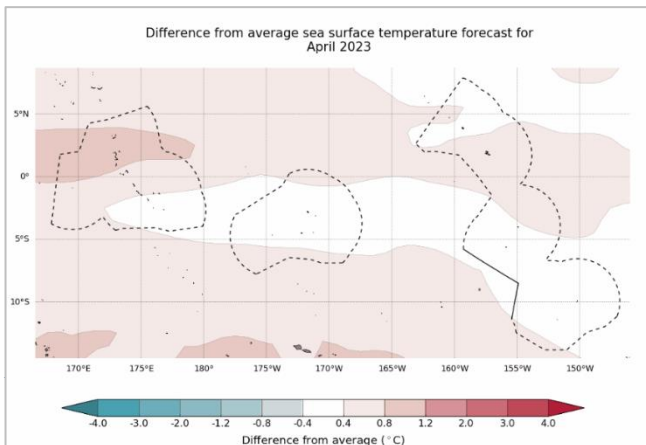


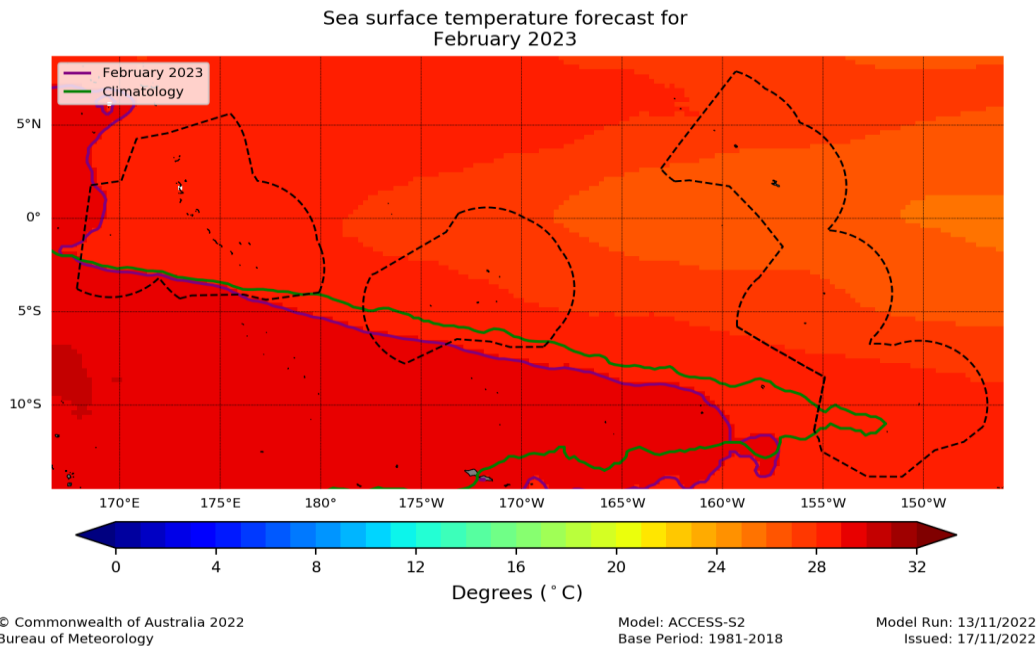
Figure 2: SST for April 2023

The two images show sea surface temperature (SST) variation in the Kiribati region for the month of February to April 2023.

The current state of sea surface temperature (Fig 1) remains cooler than normal in some parts of the Phoenix and Line Group. However, the Gilbert Islands Group is anticipated to be normal sea surface temperature for the month of February.

For image 2, it shows the forecast state of the sea surface temperature for April 2023 where most parts of the Kiribati Group will be anticipating normal sea surface temperature. However, the northern parts of the Gilbert group will be expected to reach a range of 0.8 to 1.2 degree Celsius.

# Upwelling zone based on Sea Surface Temperature

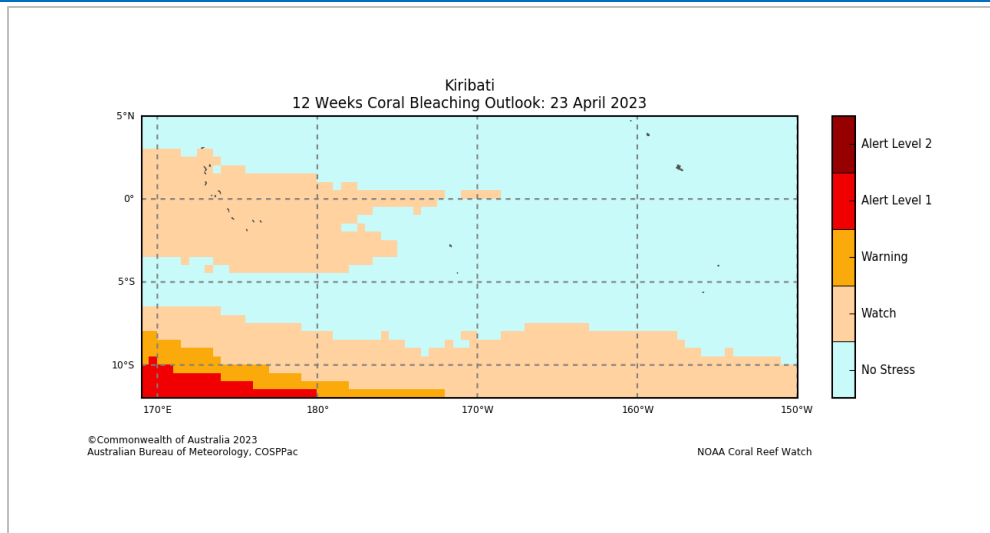


The upwelling zone shows the position of the nutrient rich area where migratory fishes like tuna species are likely to be dominant in.

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

The normal position (green line) of the upwelling zone lies over the southern EEZ of the Gilbert region. Thus, the upwelling zone ( purple line) is expected to be near the southern EEZ of the Gilbert group.

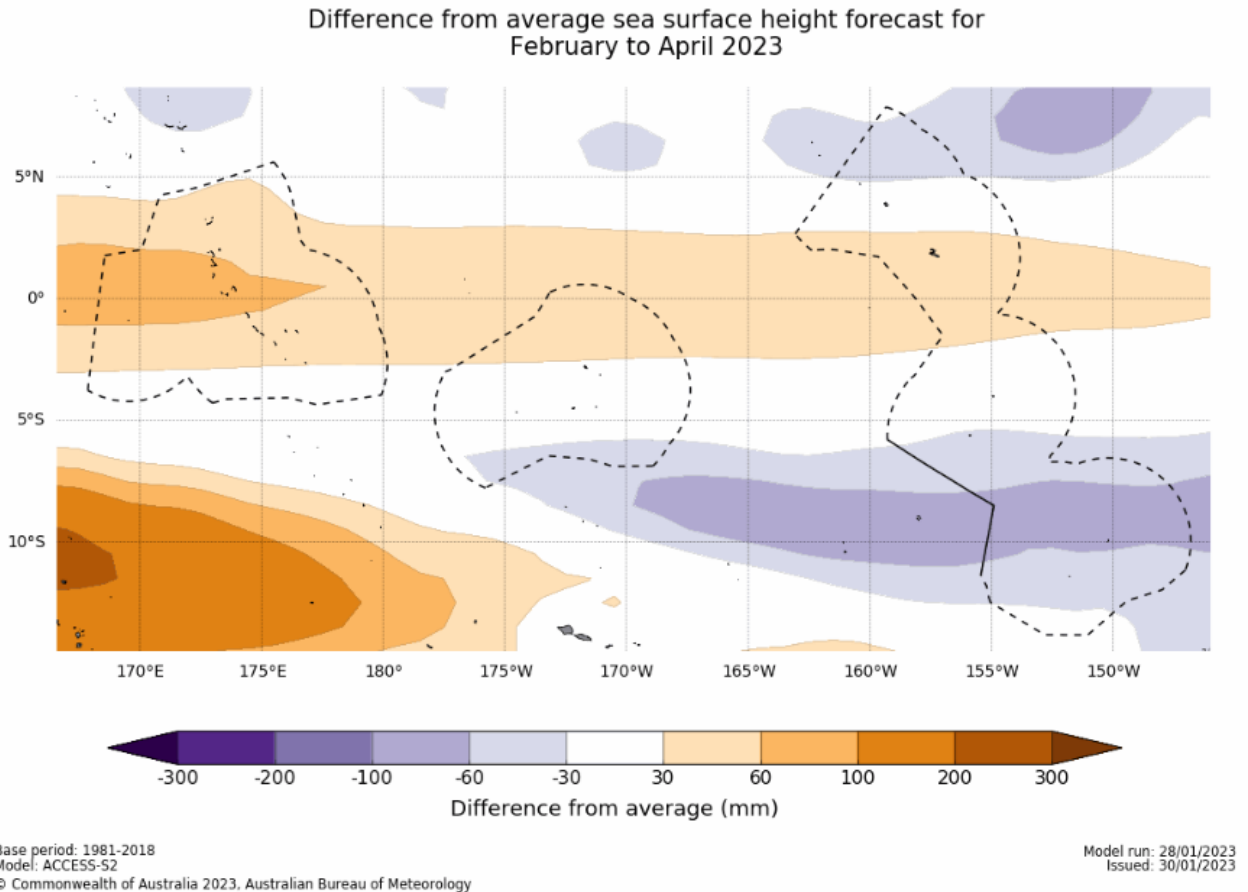
# Coral Bleaching



For the twelve weeks coral bleaching outlook given above, it shows that there is no thermal stress for Line and Phoenix Islands Group while the Gilbert Islands Group is expected to be on Watch. Therefore, it is a good time for the Line and Phoenix islands group to have leisure activities such as diving, fishing, and surfing around those times.

**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



The seasonal sea level for the Northern Gilbert Island is anticipated to be increasing by 60 to 100mm (0.06-0.1m) while the rest of the Gilbert islands as well as the Northern Line group are expecting slightly increased by 30 to 60mm (0.03-0.06m). However, Phoenix and Line Island will be expecting normal sea level height for February to April 2023.

# Extreme Spring Tide Prediction

Month	Date	Time	Height	Moon Phase
February	19 <sup>th</sup>	1621	2.87	New Moon
	20 <sup>th</sup>	1700	2.96	
	21 <sup>st</sup>	1738	2.96	
March	22 <sup>nd</sup>	1814	2.87	
	20 <sup>th</sup>	1603	2.83	
	21 <sup>st</sup>	1640	2.89	
	22 <sup>nd</sup>	1714	2.86	

The table shown above, it shows spring tides expected for the months of February to April 2023. The highest spring tide within these three months will fall on the 20<sup>th</sup> and 21<sup>st</sup> of February with height of 2.96m at 05:00pm and 05:38pm in the afternoon.

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 the damages and inundation if associated with gusty and strong wind. Thus, those who live along the coastal areas are encouraged to take precautionary measures to minimise possible threats.