



Climate & Ecosystem Status Report

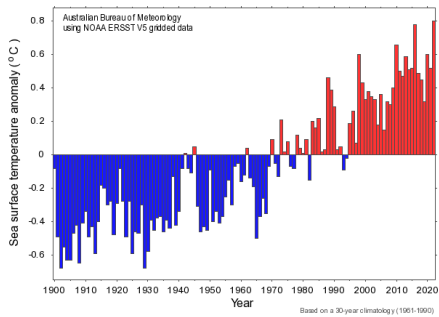
Bass Strait Central Zone Scallop Fishery

May 2024

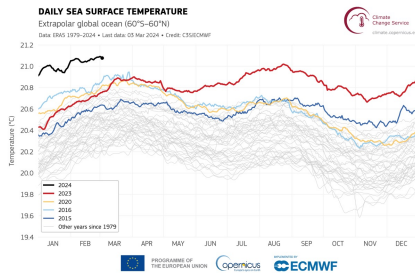


Historical Period

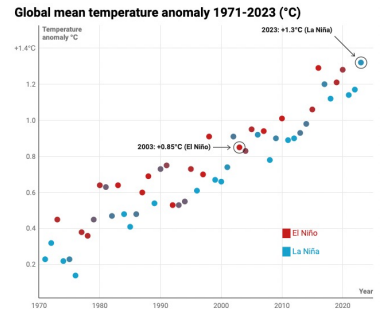
Climate Drivers



Australian waters have warmed significantly over time ([link](#))¹. The last decade has been ~0.5°C warmer than the 1960-1990 mean.

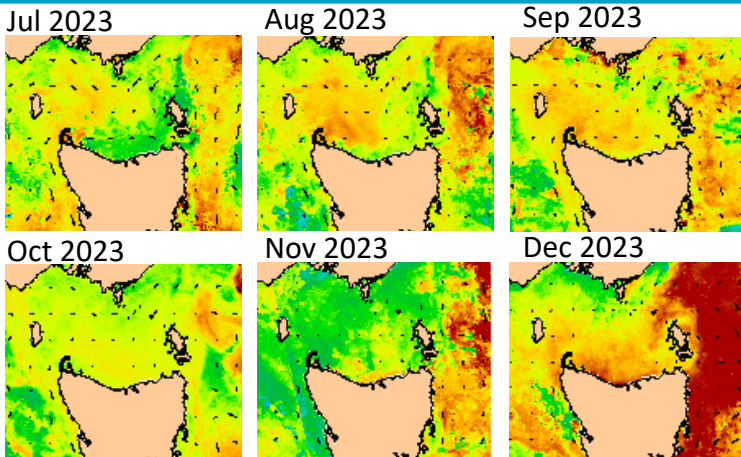


Global Sea Surface Temperature (SST) remains at record highs in 2024 ([link](#))².



ENSO interacts with long-term warming. E.g. La Niña brings cooler conditions, but recent La Niña's have been warmer than historical El Niño's.

Temperature: Bass Strait

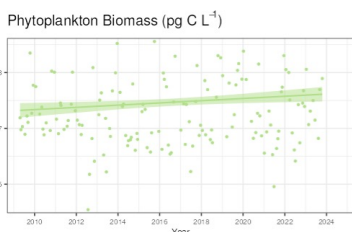


Bass Strait waters have had elevated temperatures and marine heatwaves throughout the 2023 scallop spawning season (Aug-Dec) ([link](#))³. The impacts to adult and larval scallops are unclear.

Moderate to severe marine heatwaves have occurred off east-Tasmania throughout summer ([link](#))⁴. Tasmania MHW alerts and resources are available ([link](#))⁵.

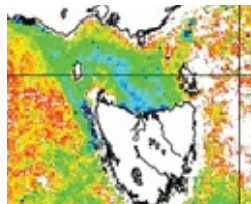
Monthly average SST anomaly (°C) ([link](#))³

Ecosystem



Maria Island National Reference Station has recorded increasing trends in ecosystem productivity ([link](#))⁶.

Chl-a trend (mg m⁻³ yr⁻¹)



Trends (2003-2009) in surface chl-a are spatially variable, with increases seen in east Bass Strait & decreases in the central region ([link](#))⁷.

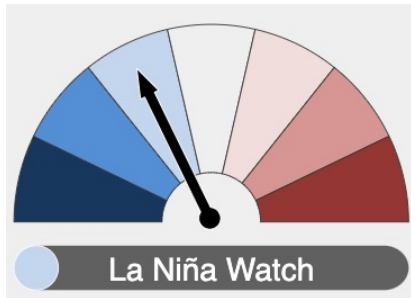
Observations

- Most catch in Bass Strait & off King Isl.
- Catch rates were high but meat quality declined from Oct-Dec.
- Some die-offs in western bass strait observed during the season.
- Anecdotal reports of meat quality recovering in Jan '24.
- Some observations that cool waters, presumed to be nutrient rich, help meat quality recovery quickly.
- Transparent shells noted.

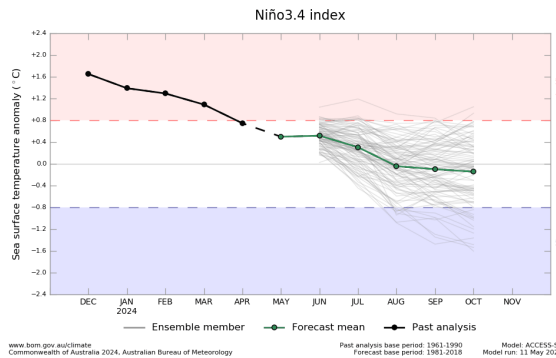


Future Outlook for 2024

Climate Drivers



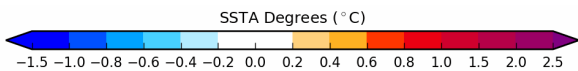
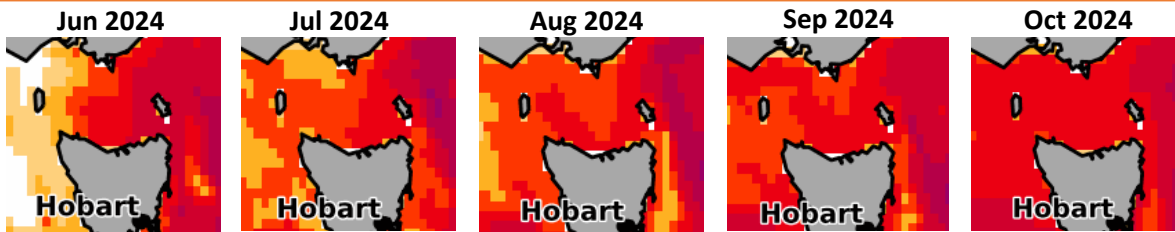
BOM Outlook is La Niña watch (50% chance of La Niña) [\(link\)](#)¹.



ENSO is currently neutral and is expected to remain so until July [\(link\)](#)¹.

www.bom.gov.au/climate Commonwealth of Australia 2024, Australian Bureau of Meteorology Past analysis base period: 1981-1999 Forecast base period: 1981-2018 Model: ACCESS-S2 Model run: 11 May 2024

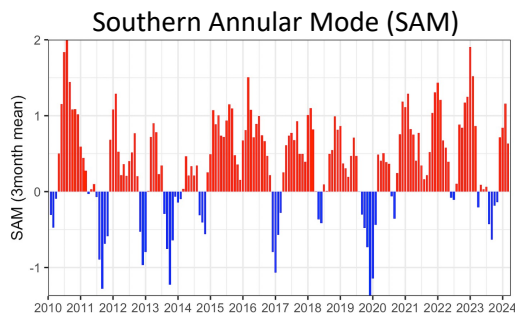
Temperature: Bass Strait



© Bureau of Meteorology Model Run: 05/05/2024 Model: ACCESS-S2 Issued: 07/05/24 Base Period: 1981-2018

Temperatures in Bass Strait are forecast to remain anomalously (>0.6°C) warm from Jun-Oct. Forecast accuracy degrades with time but are updated regularly [\(link\)](#)¹.

Ecosystem and Fishery



SAM indicates the north-south movement of westerly winds that bring storms to southern Australia. Positive phases (red), where westerlies shift poleward, have become more common. Rainfall over Australia varies regionally and seasonally with each SAM phase^{1,8} [\(link\)](#).

Negative SAM phases shift westerly winds further north, which have been proposed to favour good scallop recruitment⁹. Negative phases are more frequent with El Niño conditions [\(link\)](#)¹, but during the 2023/2024 El Niño summer the SAM was often in a positive phase.

SAM can vary from weeks to months, and forecasts are updated regularly [\(link\)](#)¹.