



Climate Report Card

NEW SOUTH WALES

JUNE 2026



SEA CHANGE
AUSTRALIA

Australia's Changing Climate

What is climate change?

Increases in greenhouse gases lead to changes in the atmosphere and the physical and biogeochemical ocean environment.

Australia's sea surface temperature (SST) has warmed by over 1 °C since 1900¹. Ongoing ocean warming contributes to longer and more frequent marine heatwaves. As waters warm, they also become more stratified – altering circulation and currents and reducing nutrient availability in surface waters.

Increased atmospheric CO₂ increases how much is absorbed by the ocean, leading to shifts in ocean chemistry and ocean acidification.

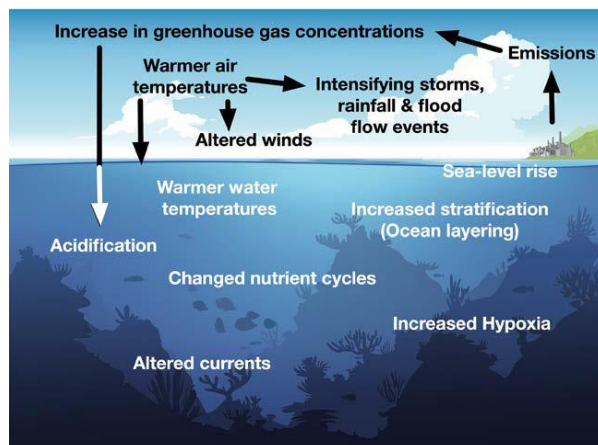


Image credit²



What impacts are expected for the seafood sector?

The seafood we eat relies on healthy marine ecosystems. Ecosystem productivity can be impacted through changing nutrient cycles, increasing temperatures, and habitat loss. Shallow coastal and estuarine ecosystems are particularly vulnerable to climate change.

The impact of climate change on the seafood sector will vary by the degree of exposure to physical change and species vulnerability.

Image credit: Nicolas Job

How to use this report



Use **page 2** to find information on SST changes over the past year and forecasts for the next two months in your area.

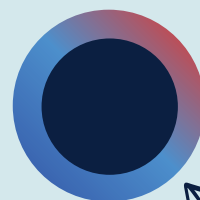


Use **pages 3-4** to learn about potential future ocean conditions due to climate change. These projections are based on a 'business as usual' scenario and show two global warming levels: 1.5°C (expected around 2015-2034) and 2°C (expected around 2030-2049). The Paris Agreement aims to limit global warming to well below 2°C above pre-industrial levels.



Report your climate observations and go 'Fishing for Climate Answers'

Check out the [Sea Change Australia](https://www.seachangeaustralia.org.au) website to log potential climate related observations in your area and submit your climate questions. Our team connects your questions with climate and fisheries experts who provide clear, practical answers.



LOOK FOR THIS
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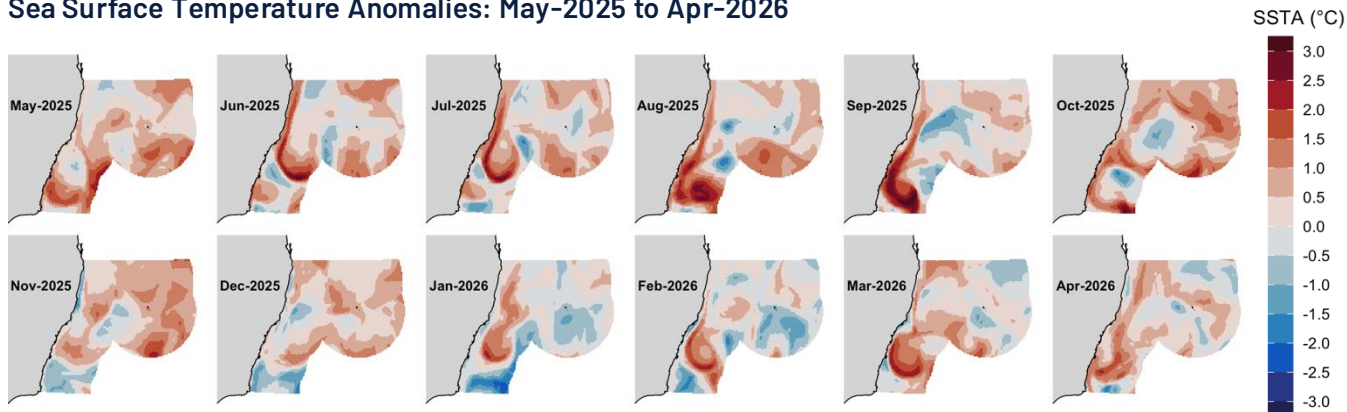
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Observed SST anomalies in 2025-26

Sea Surface Temperature Anomalies: May-2025 to Apr-2026



The graphic shows monthly SST anomalies from May 2025 to Apr 2026 (base period 1993-2016)³. Surface temperatures were warmer than average for most of the year, with patches of cooler water occurring in most months. The spatial patterns of anomalies reflect the dynamics of eddies and the East Australia current. A moderate marine heatwave associated with a warm-core eddy formed off southern NSW in Aug-Oct.

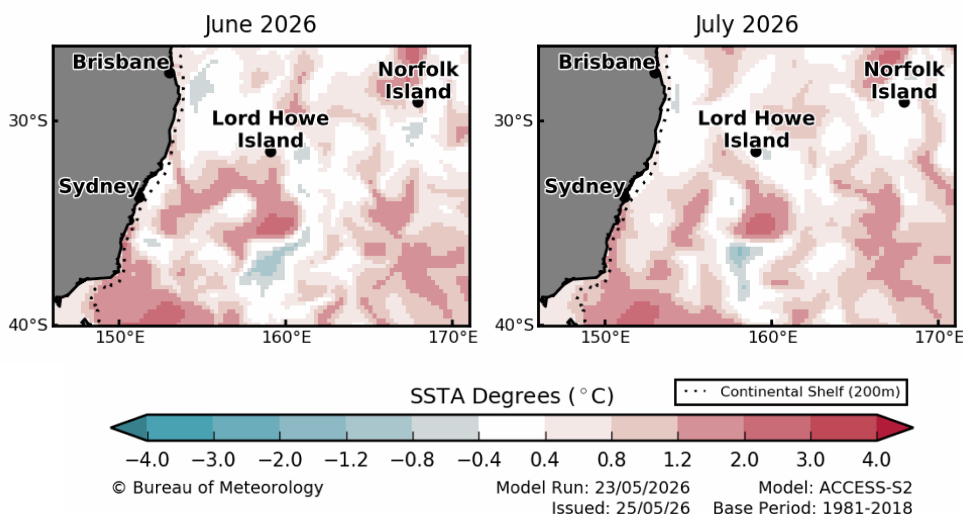
Similar SST anomaly maps from BOM can be accessed [here](#).



Waters have been warmer than usual in 2025-2026.

Forecast Conditions: Jun-Jul 2026

Australia Sea Surface Temperature Anomaly Outlook



See BOM for seasonal forecast outlooks for SST

Monthly SST anomalies are forecast to remain anomalously warm from Jun-Jul 2026⁴. Forecasts are updated regularly and can be accessed [here](#).



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Projected Change: Ocean Warming

Baseline

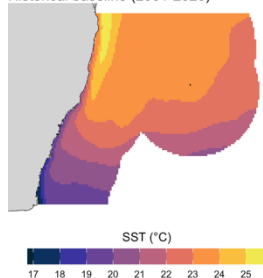
Projected



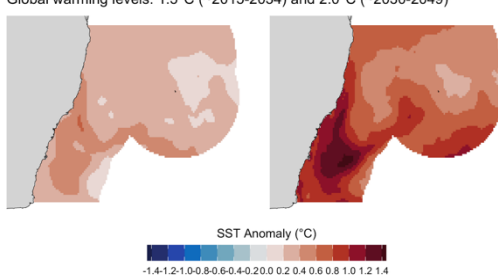
Waters are projected to warm, with longer-lasting marine heatwaves.

Sea Surface Temperature

Historical baseline (2001-2020)



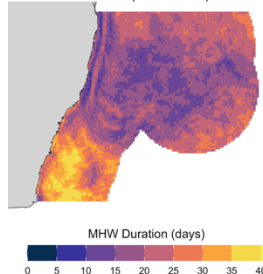
Global warming levels: 1.5°C (~2015-2034) and 2.0°C (~2030-2049)



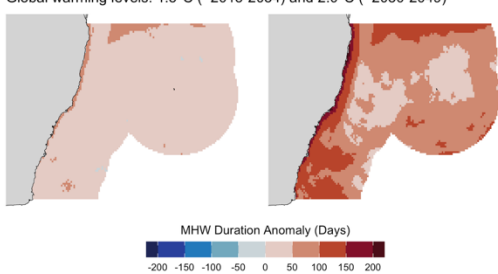
SSTs are projected to increase under climate change. The degree of warming is highest in the south.

Marine Heatwave Duration

Historical baseline (2001-2020)



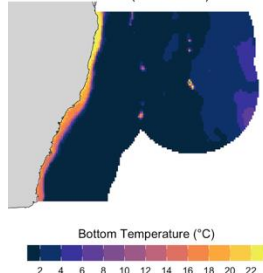
Global warming levels: 1.5°C (~2015-2034) and 2.0°C (~2030-2049)



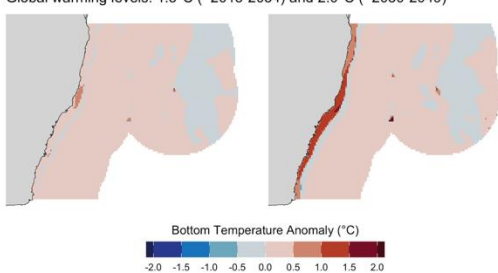
Marine heatwaves are projected to increase in duration, and this pattern is highest along the coast and in southern NSW. Under a 2°C global warming level (~2030-2049), this region is projected to experience marine heatwave conditions for much of the year (relative to the baseline).

Bottom Temperature

Historical baseline (2001-2020)



Global warming levels: 1.5°C (~2015-2034) and 2.0°C (~2030-2049)



Bottom temperatures are projected to increase under climate change. The degree of warming is highest in shallow waters on the continental shelf.

Climate projections are from the Ocean Forecasting Australian Model (OFAM), which is a spatially-downscaled ocean model⁵. Projections are based on a 'business as usual' scenario (CMIP5) and show two global warming levels: 1.5°C (expected around 2015-2034) and 2°C (expected around 2030-2049) relative to a historical baseline (2001-2020).



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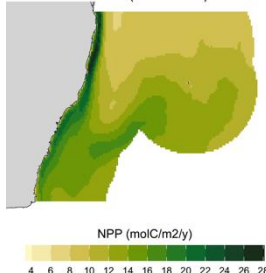
Projected Change: Ecosystem Productivity

Baseline

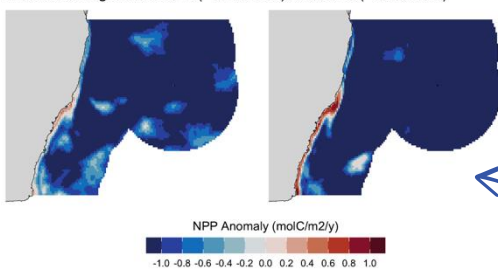
Projected

Net Primary Productivity

Historical baseline (2001-2020)



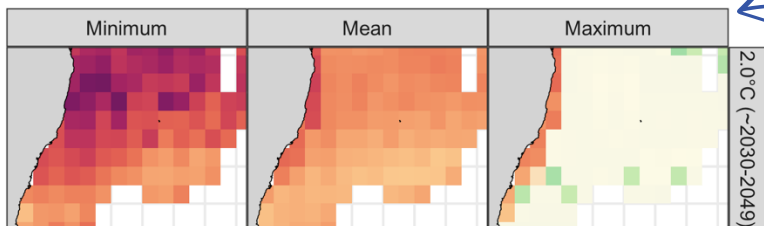
Global warming levels: 1.5°C (~2015-2034) and 2.0°C (~2030-2049)



Productivity is projected to decline but is uncertain.

Projections of **net primary productivity**, the base of the marine food web, show an increase in nearshore waters of central and southern NSW, and decreases for other regions. Projections are highly uncertain⁵.

Exploitable Fish Biomass



Change in biomass (%)



Ecosystem models project changes in the biomass available to fisheries (animals 10g - 100kg) under a 2.0°C global warming level.

On average, there is a decline in biomass, but this is uncertain. Minimum and maximum biomass estimates show divergent patterns.

Biomass is estimated from 6 ecosystem models projected under CMIP6⁶. Ecosystem models integrate temperature, oxygen, salinity, acidity, nutrients, & primary productivity, among other variables.

Climate adaptation in action

In New South Wales, adaptation to changing climate conditions is being explored in shellfish farming, including oysters, mussels and clams. Farmers, researchers and hatcheries are investigating options such as relocating leases to areas with more reliable food delivery, including offshore environments, as well as selective breeding of shellfish better suited to lower or more variable food conditions, and greater investment in hatcheries to produce more resilient spat.

Image credit: Andy Myers



Produced by CSIRO in partnership with Sea Change Australia.

Sources: ¹BOM State Of the Climate 2024 ²Fulton et al., 2021

³CMEMS ⁴BOM ⁵CSIRO ⁶Blanchard and Novaglio 2024

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