

South-east Australia marine heatwave forecast to be literally off the scale

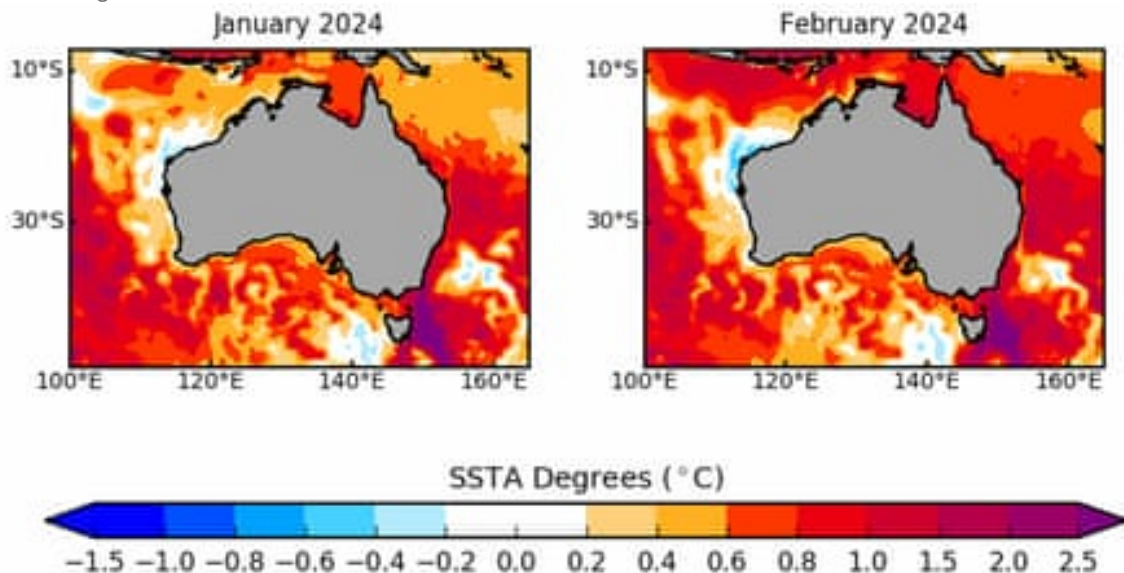
Patch of Tasman sea expected to warm over spring and summer to temperatures that risk significant losses to sea life

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A Bureau of Meteorology map showing sea surface temperatures. The Bureau of Meteorology expects a patch of the Tasman Sea off Tasmania and Victoria will be at least 2.5C above average from September to February.

Australia's south-east is in for a marine heatwave that is literally off the scale, raising the prospect of significant losses in fishing and aquaculture.

The Bureau of Meteorology expects a patch of the Tasman Sea off Tasmania and Victoria will be at least 2.5C above average from September to February, and it could get much hotter than that.

Oceanographer Grant Smith said the colour-coded scale the bureau uses to map forecast sea surface temperature anomalies stops at 2.5C.

“We didn’t account for anomalies that high when we developed this ... it could be 3C, it could be 3.5C, but we can’t see how high it goes,” he said.

Smith cannot be sure that it is the first time forecast temperatures have gone beyond the scale’s upper limit but it is the first time he has seen it, and it is probably time to “add another notch”.

South-eastern Australia is a known climate change hotspot with its waters warming about four times faster than the global average.

“The east Australian current brings warm water south and then also the rising atmospheric temperature cooks it at the same time,” CSIRO research director Alistair Hobday said.

In 2016, the region suffered its longest ever marine heatwave, which ran for about 250 days, and the effects on marine life were profound.

Abalone fishers reported a rise in catch mortality, Tasmania’s salmon farming industry lost stock to the warm water, tropical fish moved in and there was an outbreak of the highly contagious viral infection Pacific oyster mortality syndrome.

Hobday said it could be more of the same if the forecast heatwave crashes into the coast.

“Then we would expect to see impacts on aquaculture, we’d expect to see new species showing up in southern south east Australia, we’d expect to see impacts on remaining kelp forest in the region,” he said, noting that Tasmania’s giant kelp species had already lost 95% of its historical range.

Salmon farmers may opt to harvest early, try to boost oxygen levels in the water, or change their feed mix.

Hobday will publish a paper in September advising researchers, industry and others about how to prepare for the hotter, drier weather expected with the likely onset of El Niño conditions after three relatively wet, cool years in Australia.

Rich Little, who is also with the CSIRO, is part-way through a project to determine how marine life has changed in south-eastern waters over recent decades.

Little and a team of scientists spent July aboard a research vessel that travelled from Hobart up Tasmania's east coast to about Eden, on the New South Wales south coast, before heading back again.

The journey mimicked a marine survey done over a similar area in the mid-1990s.

Two more runs will be done by November 2024, allowing scientists to analyse what is being caught in nets compared with a couple of decades ago.

While it is too soon to draw any conclusions, there is some solid anecdotal evidence that the mix of marine life has changed.

"Anecdotally ... we caught a lot, lot more mackerel than we know they caught in the 1990s. Tonnes of mackerel," he said.

"At the same time we saw a lot of things that feed on mackerel – more fur seals that were feeding on them."

The number of seals in the area, as well as other marine mammals, has skyrocketed.

Other species that were commonly caught in the 1990s were relatively scarce, including blue warehou and red fish.

One of the big questions scientists are hoping to answer is how much of any documented change can be attributed to climate change.

It is not a simple question given how much else is going on in south-eastern waters, from oil and gas exploration including seismic blasting to foundational work for a promised offshore windfarming industry.

"Our original test is to see whether the change in the ecosystem that we've now observed is the result of climate or other factors, or a combination of those," he said.

"We really can't make a definitive conclusion at this stage, but I think it's most likely to be a combination of both."