

Media Release

Chiefs of Staff, News Directors

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Study finds 2015/16 Tasman Sea marine heatwave a sign of things to come

A new study has found that human induced climate change was almost certainly responsible for a marine heatwave off Tasmania's east coast in the summer of 2015/16, and similar events are increasingly likely in the coming decades.

[Published in the international journal *Nature Communications*](#), the research found the heatwave affected an area more than seven times the size of Tasmania for 251 consecutive days, reaching a peak intensity of 2.9 degrees Celsius above expected summertime temperatures.

A research team led by scientists from IMAS and the Australian Research Council Centre of Excellence for Climate System Science, in collaboration with the CSIRO and the Australian Institute of Marine Science, found the heatwave was driven by a surge of warm water in the East Australian Current, which has been getting stronger in recent decades.

Lead author Dr Eric Oliver said impacts were felt across industries and ecosystems, and industries and governments should prepare for an increase in such events throughout the 21st Century.

"Scientists are inherently conservative about making grand claims, but we can say with 99 per cent confidence that anthropogenic climate change made this marine heatwave several times more likely, and there's an increasing probability of such extreme events in the future," Dr Oliver said.

"The 2015/16 event was the longest and most intense marine heatwave on record off Tasmania.

"Early that summer swimmers and surfers noted the unusual warmth of the waters around Tasmania, and by halfway through the summer it was clear something exceptional was happening.

"Significant impacts were felt across marine ecosystems, including an outbreak of Pacific Oyster Mortality Syndrome (POMS), enhanced mortality of blacklip abalone, poor performance of salmon aquaculture, and intrusions by fish normally seen in warmer, more northerly waters," Dr Oliver said.

Co-author Associate Professor Neil Holbrook said ongoing monitoring and research was needed to enable the early identification of future heatwaves and to support adaptive management of marine resources.

"The evidence shows that the frequency of extreme warming events in the ocean is increasing globally," Associate Professor Holbrook said.

“In 2015 and 2016 around one quarter of the ocean surface area experienced a marine heatwave that was either the longest or most intense recorded since global satellite records began in 1982.

“The ocean off southeastern Australia is a global warming hotspot, with near-surface waters warming at nearly four times the global average rate.

“Studies such as this can play an important role in helping industries, governments and communities to plan for and adapt to the changes that we are experiencing, and their growing impacts on our environment and ecosystems,” Associate Professor Holbrook said.

This research was also supported by, and makes a contribution to, the National Environmental Science Programme Earth Systems and Climate Change Hub.

Video of Assoc Prof Holbrook talking about the marine heatwave along with an animation and images of a map of the event are available in Dropbox:

<https://www.dropbox.com/sh/ygpk4bntn4qhrhs/AACFtDDF-afxSs67b1i9FnzDa?dl=0>

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