

# Australia's coastal observation network may aid in understanding of extreme ocean events

December 17 2014

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A network of nine reference sites off the Australian coast is providing the latest physical, chemical, and biological information to help scientists better understand Australia's coastal seas, according to a study published December 17, 2014 in the open-access journal *PLOS ONE* by Tim Lynch from CSIRO, Australia and colleagues.

Sustained oceanic observations allow scientists to track changes in oceanography and ecosystems. To address this, the Australian Integrated Marine Observing System (IMOS) implemented a [network](#) of nine National Reference Stations (NRS). The network builds on three long-term locations, where monthly water sampling has been ongoing since the 1940s and 50s. These moored sensors now collect more than 50 data streams, including sampling for temperature, salinity and nutrients, carbon, currents, and both phytoplankton and zooplankton.

The authors of this study evaluated the utility of this network and found that it may aid in observation of extreme events, such as marine heat waves, rare events, such as plankton blooms, and allow for consistent large scale sampling and analysis of coastal zooplankton and phytoplankton communities. The NRS may provide scientists with an understanding of how large-scale, long-term change and variability in the global ocean are affecting Australia's coastal seas and ecosystems.

Lead author, Dr Tim Lynch from CSIRO's Oceans and Atmosphere Flagship, says, "For the first time in Australia, we have combined forces across our various marine institutes and research organisations to build a

continent-wide sampling of our coastal seas and ecosystems, so we can continuously track and understand variation at daily, seasonal, and annual time scales."

**More information:** Lynch TP, Morello EB, Evans K, Richardson AJ, Rochester W, et al. (2014) IMOS National Reference Stations: A Continental-Wide Physical, Chemical and Biological Coastal Observing System. *PLoS ONE* 9(12): e113652. [DOI: 10.1371/journal.pone.0113652](https://doi.org/10.1371/journal.pone.0113652)

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