

Report card shows Australia's oceans are changing

August 16 2012

The 2012 Marine Climate Change in Australia Report Card shows climate change is having significant impacts on Australia's marine ecosystems.

The report card provides information about the current and predicted-future state of Australia's marine climate and its impact on our marine biodiversity. The report card also outlines actions that are underway to help our marine ecosystems adapt to climate change.

"Australia has some of the world's most unique marine ecosystems," project leader CSIRO's Dr Elvira Poloczanska said.

"They are enjoyed recreationally, generate considerable economic wealth through fisheries, aquaculture, and tourism, and provide irreplaceable services including coastal defence, [oxygen production](#), nutrient recycling and climate regulation.

"Although there are some concerning findings in the 2012 report card, the information we've compiled is helping to ensure that ocean managers and policy makers are best placed to respond to the challenge of managing the impact that climate change is having on these systems."

Key findings show:

- warming [sea temperatures](#) are influencing the distribution of

[marine plants](#) and animals, with species currently found in tropical and temperate waters likely to move south

- new research suggests winds over the Southern Ocean and current dynamics are strongly influencing foraging of seabirds that breed in south-east Australia and feed close to the Antarctic each summer
- some tropical fish species have a greater ability to acclimatise to rising [water temperatures](#) than previously thought
- the Australian science community is widely engaged in research, monitoring and observing programs to increase our understanding of [climate change impacts](#) and inform management
- adaptation planning is happening now, from seasonal forecast for fisheries and aquaculture, to climate-proofing of breeding sites for turtles and seabirds.

Led by CSIRO, more than 80 Australian [marine scientists](#) from 34 universities and research organisations contributed to the 2012 report card. The report card draws on peer-reviewed research results from hundreds of scientists, demonstrating a high level of scientific consensus.

"Our knowledge of observed and likely impacts of climate change has greatly advanced since the first card in 2009," Dr Poloczanska said.

Aspects of [marine climate](#) which have been analysed include changes in sea temperature, sea level, the East Australian Current, the Leeuwin Current, and El Niño-Southern Oscillation.

Marine biodiversity assessed for the report card include impacts on coral reefs; tropical, temperate and pelagic fish; marine mammals; marine reptiles; seabirds; mangroves; tidal wetlands; seagrass; macroalgae; marine microbes; phytoplankton and zooplankton. The two new sections

included in the 2012 report card focus on the smallest and largest organisms in the oceans: microbes and whales.

Provided by CSIRO

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