



Backgrounder:

Regional impacts + the 1.5°C climate target -

Australia + Pacific

Australia

Australia's NDC is [rated](#) by Climate Action Tracker as "insufficient" to reach the 1.5°C temperature target contained in the Paris Agreement. Current Australian climate pledges are consistent with the world warming by up to 3°C.

- Australia has ratified the Paris Agreement, and pledged to reduce emissions 26–28% below 2005 levels by 2030, including emissions from land use (LULUCF). Australia's current policies would mean it misses this target, with emissions increasing by 0.4% a year.
- Australia's NDC target emissions by 2030: 413 MtCO_{2e}
Australian emissions in 2030 under current policies: 548 MtCO_{2e}
Australian emissions in 2018 under current policies: 529 MtCO_{2e}

Projected impacts across Australia and the Pacific

With 1.5°C of warming:

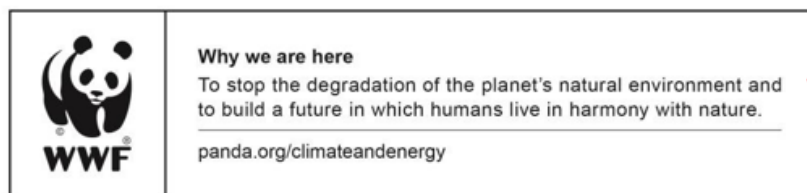
- The amount of freshwater available in rivers and lakes could decrease by [10% in Australia](#).¹
- The number of [El Niño events in the Pacific](#) is expected to double, potentially [boosting temperatures](#) during the years when the event occurs.
- Rising temperatures, drought, and unstable weather patterns have serious implications for global food production. Every degree of global temperature rise [reduces](#) global yields of wheat by 6.0%, rice by 3.2%, maize by 7.4%, and soybean by 3.1%.
- By the end of the century, [nine out of ten](#) of coral reefs are at risk from severe degradation from 2050 onwards. This declines to 70% by 2100 - meaning that some coral reefs have a chance of survival. At the moment, coral reefs [provide](#) about US\$30 billion annually to the world economy, in coastal protection, building materials, fisheries and tourism.

¹ Differential climate impacts for policy-relevant limits to global warming: the case of 1.5C and 2C, (2015), Earth System Dynamics, Table S4.

With more than 1.5°C of warming:

- Globally, agricultural yields [fall rapidly](#) between one and 3°C of warming. Once local temperatures reach 3°C above pre-industrial levels, all crops are negatively affected, wherever they are in the world - including in temperate regions.² Fish species go locally extinct, with serious impacts on fisheries.³
- Under 2°C of temperature rise, annual runoff is expected to decrease by about 30% in the Murray Darling river basin.⁴
- If temperatures rise to 2°C, [virtually all](#) the world's tropical coral reefs are at risk of severe degradation and [collapse](#). Coral reefs account for [10 to 12%](#) of the fish caught in tropical countries, and 20 to 25% of the fish caught by developing nations.⁵ They provide food, income and protection from storms for millions of people along [coastal areas](#).
- With 3°C of warming, groundwater levels will fall, with [the rate at which groundwater is replenished](#) predicted to fall to perhaps half of 1990 levels by 2050 in some parts of Australia.⁶

This paper was prepared by GSCC to support understanding of issues arising from the IPCC's Special Report on 1.5°C warming.



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² IPCC, AR5, WGII, Chapter 7, p.497.

³ IPCC, AR5, WGII, Chapter 7, p.508.

⁴ World Bank report: Turn down the heat: why a 4°C warmer world must be avoided, p.xvi.

⁵ IPCC, AR5, WGII, CC Boxes, p.99.

⁶ IPCC, AR5, WGII, Chapter 3, Table 3-2.