
Editorial

PARIS AGREEMENT GOALS SLIPPING AWAY AND WITH THEM AUSTRALIA'S CHANCE TO SAVE THE GREAT BARRIER REEF

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A TORTUROUS PATH AND VICIOUS HEADWINDS

Following a torturous path, in 2015 the global community agreed in the *Paris Agreement*¹ to a goal of:

Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.

The *Paris Agreement* was an enormous milestone that has been hailed as a “major diplomatic success”² and it certainly was in the context of the history, difficulty and complexity of the negotiations. It crossed political and legal canyons that had divided the global community and prevented progress on responding to the threat of dangerous climate change for over a decade. Its goals, and the impacts we expect to occur even if they are achieved, are far better than unmitigated climate change where the global temperatures increase by 4°C or more – a future that would imperil humanity’s continued existence.³ And, as Peter Christoff writes:⁴

the power of storytelling in policy and politics should not be underestimated. The acclamation of the Paris Agreement as a success is a powerful mobiliser, in contrast to the narrative of failure that followed [the 2009 international climate meeting in] Copenhagen. ... Crucially, Paris has also amplified the economic narrative of an increasingly cheap and viable path for decarbonisation.

But, as Christoff cautions, the value of the *Paris Agreement*:⁵

remains unclear. It will be a success only if it manages to ratchet up collective climate action in ways sufficient to meet its broad aims. Its mechanisms aim to ensure that tougher mitigation measures are iteratively brought into being. Specifically, its five-yearly reviews must lead major emitters to decarbonise rapidly enough to bridge the “emissions gap”. At the same time, it will need to encourage major economies to provide sufficient finance and development assistance to overcome the current “adaptation gap”. Its powers in ensuring outcomes are limited, and more still needs to be done to elaborate on the enabling framework of the Agreement, but if it fails in either task, Paris will be condemned as the conference that offered the last illusion of hope that we are tackling global warming.

There are currently 195 signatories and 184 parties to the *Paris Agreement*⁶ but that widespread agreement belies the fact that, individually and collectively, the commitments made by the parties are inadequate to achieve even the target of 2°C.⁷ The current nationally determined contributions (NDCs) pledged under

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¹ The *Paris Agreement*, signed 12 December 2015, [2016] ATS 24 (entered into force generally 4 November 2016 and for Australia 9 December 2016). UNTS reference: C.N.92.2016.TREATIES-XXVII.7.d.

² Peter Christoff, “The Promissory Note: COP 21 and the Paris Climate Agreement” (2016) 25 *Environmental Politics* 765, 766.

³ See, Mark New et al, “Four Degrees and Beyond: The Potential for a Global Temperature Increase of Four Degrees and Its Implications” (2011) 369 *Philosophical Transactions of Royal Society Series A* 6; Will Steffan et al, “Trajectories of the Earth System in the Anthropocene” (2018) 115 *Proceedings of the National Academy of Sciences of the United States of America* 8252; Connor Nolan et al, “Past and Future Global Transformation of Terrestrial Ecosystems under Climate Change” (2018) 361 *Science* 920.

⁴ Christoff, n 2, 782.

⁵ Christoff, n 2, 781.

⁶ See the United Nations Climate Change website <<https://unfccc.int/process/the-paris-agreement/status-of-ratification>>.

⁷ Joeri Rogelj et al, “Paris Agreement Climate Proposals Need a Boost to Keep Warming Well Below 2 °C” (2016) 534 *Nature* 631; United Nations Environment Programme, *Emissions Gap Report 2018* (UNEP, Nairobi, 2018) <<https://www.unenvironment.org/resources/emissions-gap-report-2018>>.

the *Paris Agreement*, including Australia's,⁸ put the world on track for a temperature rise of "about 3°C by 2100, with warming continuing afterwards".⁹ Using Australia's NDC as an international benchmark for ambition in climate policies would put the world on track for temperature rises of 4.4°C by 2100.¹⁰ Yet Australia and several other members of the G20 require substantial new and enhanced policies to make progress towards achieving even their 2030 NDC targets.¹¹ There is little evidence that the "rapid and far-reaching transitions in energy, land, urban and infrastructure, and industrial systems [which] are unprecedented in terms of scale",¹² required to reach the 1.5°C target, are being achieved or likely to be achieved either in Australia or globally.

Another obvious, major impediment to the success of the *Paris Agreement* is the election of the Trump Administration in the United States, which announced in 2017 that it intends to withdraw from the *Paris Agreement* and has set about dismantling domestic action on climate change.¹³

ENORMOUS LOSSES ARE EXPECTED EVEN UNDER THE PARIS AGREEMENT

Even leaving aside the vicious headwinds that confront the *Paris Agreement* in achieving its goals, perhaps worse is the fact that enormous losses are expected even if the goals are achieved. For instance, coral reefs such as Australia's iconic Great Barrier Reef (GBR), are being severely impacted by climate change even at current levels where mean global temperatures have increased by approximately 1°C above pre-industrial levels.¹⁴ If global temperatures rise to 1.5°C above pre-industrial levels, most coral reefs are expected to be lost around the globe, while at 2°C virtually all coral reefs are expected to be lost.¹⁵

The recent IPCC special report on *Global Warming of 1.5°C* found:

Coral reefs ... are projected to decline by a further 70–90% at 1.5°C (*high confidence*) with larger losses (>99%) at 2°C (*very high confidence*).¹⁶ ...

... multiple lines of evidence indicate that the majority (70–90%) of warm water (tropical) coral reefs that exist today will disappear even if global warming is constrained to 1.5°C (*very high confidence*).¹⁷

Warm water (tropical) coral reefs are projected to reach a very high risk of impact at 1.2°C, with most available evidence suggesting that coral-dominated ecosystems will be non-existent at this temperature or higher (*high confidence*). At this point, coral abundance will be near zero at many locations and storms will contribute to "flattening" the three-dimensional structure of reefs without recovery, as already observed for some coral reefs. The impacts of warming, coupled with ocean acidification, are expected to undermine the ability of tropical coral reefs to provide habitat for thousands of species, which together

⁸ Australia committed to an "economy-wide target to reduce greenhouse gas emissions by 26% to 28% below 2005 levels by 2030" for direct emissions (ie excluding coal and gas exports, which Australia's NDC ignores): see the NDC interim registry at <<https://unfccc.int/process/the-paris-agreement/nationally-determined-contributions>>.

⁹ United Nations Environment Programme, n 7, p xiv.

¹⁰ Yann Robiou du Pont and Malte Meinshausen, "Warming Assessment of the Bottom-up Paris Agreement Emissions Pledges" (2018) 9 *Nature Communications* 4810, the results of which (including based on applying Australia's level of ambition) are available online at <<http://paris-equity-check.org/warming-check.html>>.

¹¹ Michel den Elzen et al, "Are the G20 Economies Making Enough Progress to Meet their NDC Targets?" (2019) 126 *Energy Policy* 238.

¹² Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty* (World Meteorological Organization, Geneva, 2018) 17 <<http://www.ipcc.ch/report/sr15/>>.

¹³ See Yong-Xiang Zhang et al, "The Withdrawal of the US from the Paris Agreement and Its Impact on Global Climate Change Governance" (2017) 8 *Advances in Climate Change Research* 213.

¹⁴ Great Barrier Reef Marine Park Authority, *Great Barrier Reef Region Strategic Assessment – Strategic Assessment Report* (GBRMPA, Townsville, 2014).

¹⁵ IPCC, n 12, 10, 226, 229–230, 235, 254.

¹⁶ IPCC, n 12, 10.

¹⁷ IPCC, n 12, 179 (cross-references omitted).

provide a range of ecosystem services (eg, food, livelihoods, coastal protection, cultural services) that are important for millions of people (*high confidence*).¹⁸ ...

Warm-water coral reefs face very high risks from climate change. A world in which global warming is restricted to 1.5°C above pre-industrial levels would be a better place for coral reefs than that of a 2°C warmer world, in which coral reefs would mostly disappear. Even with warming up until today (GMST for decade 2006–2015: 0.87°C), a substantial proportion of coral reefs have experienced large-scale mortalities that have led to much reduced coral populations. In the last three years alone (2016–2018), large coral reef systems such as the Great Barrier Reef (Australia) have lost as much as 50% of their shallow water corals.¹⁹ ...

Even achieving emission reduction targets consistent with the ambitious goal of 1.5°C of global warming under the Paris Agreement will result in the further loss of 70–90% of reef-building corals compared to today, with 99% of corals being lost under warming of 2°C or more above the pre-industrial period.²⁰

The goals at the heart of the *Paris Agreement*, therefore, reflect a dilemma. On one hand they were the best that was politically possible at the time of the agreement and better than a future of unmitigated climate change. On the other hand, even if they are achieved, we will lose iconic ecosystems such as coral reefs and humanity will suffer terribly. Even at these levels, the Earth may reach tipping points that are uncontrollable.²¹

The Australian Government's lack of urgency in avoiding these impacts – if not outright derision of the need to take urgent action – is palpable in its refusal to acknowledge the inadequacy of the *Paris Agreement* to protect the GBR and the findings of the IPCC's special report. The new Australian Prime Minister, Scott Morrison, has jovially said repeatedly that Australia will meet its commitments under the *Paris Agreement* “in a canter”.²² Climate scientists strongly dispute this and the adequacy of Australia's policies²³ but, even more tellingly, the Prime Minister and his government continue to ignore the fact that current NDCs pledged under the *Paris Agreement*, including Australia's, put the world on track for temperature rise of more than 3°C²⁴ and with it the loss of the GBR. At least for now, Australia is too cowardly to admit this publicly.

For the past decade the Australian Government has focused on adaptation through building the “resilience” of the GBR by improving water quality and other management measures²⁵ but that policy was shown as largely futile by the mass coral bleaching in early 2016, which severely damaged the northern (least polluted) section of the GBR. Terry Hughes and his colleagues concluded in their leading study of this bleaching event published in *Nature*:

We find that local management of coral reef fisheries and water quality affords little, if any, resistance to recurrent severe bleaching events: even the most highly protected reefs and near-pristine areas are highly susceptible to severe heat stress. On the remote northern Great Barrier Reef, hundreds of individual reefs were severely bleached in 2016 regardless of whether they were zoned as no-entry, no-fishing, or open to fishing, and irrespective of inshore–offshore differences in water quality. However, local protection of fish stocks and improved water quality may, given enough time, improve the prospects for recovery. ...

¹⁸ IPCC, n 12, 226 (citations omitted).

¹⁹ IPCC, n 12, Box 3.4, 229 (citations and cross-references omitted).

²⁰ IPCC, n 12, Box 3.4, 230 (citations and cross-references omitted). See also, 254.

²¹ Steffan et al, n 3.

²² See, eg, Adam Morton, “In a Canter? Climate Experts Say Australia Will Not Meet Emissions Targets”, *The Guardian*, 11 October 2018 <<https://www.theguardian.com/australia-news/2018/oct/11/in-a-canter-climate-experts-say-australia-will-not-meet-emissions-targets>>. Multiple, independent analyses have found that Australia's emissions under current policies are expected to fall short of achieving its NDC targets for 2030: see den Elzen et al, n 11, 243.

²³ See Morton, n 22.

²⁴ United Nations Environment Programme, n 7, xiv.

²⁵ See, most recently, the Australian Government and Queensland Government, *Reef 2050 Long-term Sustainability Plan – July 2018* (Commonwealth of Australia, Canberra, 2018) <<https://www.environment.gov.au/marine/gbr/long-term-sustainability-plan>>.

Securing a future for coral reefs, including intensively managed ones such as the Great Barrier Reef, ultimately requires urgent and rapid action to reduce global warming.²⁶

The Australian Government routinely ignores these sorts of findings that show the hollowness of its policies to protect the GBR. This is not to say that working to improve the health and resilience of the GBR is not a good thing. But, just as a healthy person will be killed by a shotgun blast to their chest – the evidence is that even healthy reefs are destroyed by climate change impacts at present levels and there is no reason to expect the GBR will survive in anything resembling its current state if the goals of the *Paris Agreement* are reached or exceeded.

AUSTRALIAN CLIMATE POLICIES NEED TO BE FAR MORE AMBITIOUS

The temperature goal that Australia needs to set to protect the GBR has been known for over a decade and is no great secret: allowing a rise in mean global temperatures of 1°C is the highest target that should be set if the GBR is to be protected from serious degradation – not the 1.5°C or 2°C goals of the *Paris Agreement*.²⁷ Perhaps this goal is physically or politically impossible to achieve at this point but Australia should at least have the courage and honesty to recognise that it is not even trying to stabilise mean global temperature rises at levels that are expected to protect the GBR.

It can hardly be doubted that Australian policy should strive to protect the GBR from severe degradation. It would be politically toxic to say, “we are too lazy and it is too expensive to protect the GBR from climate change, so we are not even going to try”. Australia should have the courage to say what needs to be done to protect the GBR: a global temperature goal of no more than 1°C above pre-industrial levels. Australia should lead the global community toward this goal or at least go down fighting for it, knowing we have done everything humanly possible to protect the GBR, our prosperity, and our children.

It remains the case²⁸ that, at the present time the policies of the Australian Government are inconsistent with protecting the GBR from severe impacts from climate change. The likely consequences of such policies should be recognised. Simply ignoring the impacts scientists believe will occur to the GBR is not a satisfactory or even tenable policy option. Choosing not to listen to weather forecasts does not stop it raining.

The goals of the *Paris Agreement* are inadequate to protect the GBR, but they are better than the alternative of no action and unmitigated climate change. However, even those inadequate goals are slipping away at present. Australia should strive to reverse this slippage and pursue stronger goals that protect the GBR. We should be far more ambitious in our climate policies and at least go down fighting to protect the GBR, not cowardly ignoring the scientific warning bells ringing loudly in our ears.

²⁶ Terry Hughes et al, “Global Warming and Recurrent Mass Bleaching of Corals” (2017) 543 *Nature* 373, 376 (cross-references and citations omitted).

²⁷ See Chris McGrath, “Setting Climate Change Targets to Protect the Great Barrier Reef” (2007) 24 *EPLJ* 182.

²⁸ As noted a decade ago in McGrath, n 27, 197.