Climate change scientist says more must be done to meet 2-degree target

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Ahead of the UN Climate Change Conference in Paris, this week, one of the most influential scientists in the field has warned that international commitments to reduce carbon emissions will not be sufficient to meet the key 2-degree centigrade figure by the end of the century.

Professor Camille Parmesan has said that, while agreement at the COP21 conference will represent 'some form of success', she fears that the pace of change is insufficient to counter the threat of global warming.

Professor Parmesan, the National Marine Aquarium Chair in Public Understanding of Oceans and Human Health within Plymouth University's Marine Institute and the National Marine Aquarium, and an Adjunct Professor at the University of Texas, adds that complacency cannot be allowed to creep in.

According to the Climate Convention Secretariat, 155 countries have published their emissions reduction targets so far, accounting for 87 per cent of the global total. But a number of bodies have calculated that those commitments will not be sufficient to meet the 2-degree target.

"When you take account of what countries have said they're willing to sign off on in Paris, we're looking at something like 2.7—3.5 degree warming, not the two degrees agreed at Copenhagen in 2009. And as the science of impacts progresses, we're getting evidence that even the Copenhagen agreement may not be enough to save the most sensitive

systems, like tropical coral reefs," said Professor Parmesan.

"Is this success or not? It's a success in that getting international sign-off on emissions targets has been a goal for more than 20 years now, ever since the Kyoto Accord went past its sell-by date. Achieving any agreement is some level of success, and it does look like a sign-off to emissions reductions will happen in Paris.

"My worry is that the policy community will be too pleased with itself, and too preoccupied with patting each other on the back, that it will risk losing the momentum we need to hit the most important target – achieving warming of less-than than two-degree centigrade mark by 2100."

Professor Parmesan is renowned for her research on the impact of climate change on wildlife, and was the first to demonstrate that species are shifting their natural ranges in response to changes in temperature. Indeed, her 2003 research paper, A globally coherent fingerprint of climate change impacts across natural systems, is the most cited research paper in the field of climate change. According to the NGO, Carbon Brief, the paper was cited 3,305 times by fellow academics in their own research, the most of any climate change research.

Published in Nature in 2003, and written in conjunction with Professor Gary Yohe, from Wesleyan University, it assessed the global impact of climate change on more than 1,700 biological species, from birds and butterflies to trees and alpine herbs. They found that more than half of species were being affected by climate change at the time, and that up to 91 per cent of these changes agreed with what was expected from ecological theory.

The work formed the bedrock of Professor Parmesan's lead contribution to the report for the Intergovernmental Panel on Climate Change, which

won a Nobel Prize in 2007, and was a factor in agreeing the 2 degree centigrade target.

"COP15, in Copenhagen, represented a milestone in reaching an international agreement to limit future warming to 2 degrees centigrade," added Professor Parmesan, who this year was given the Marsh Award for Climate Change Research by the British Ecological Society.

"And there is still time to achieve that target if we can secure further reductions in the coming decade. So while achieving an agreement for all 180-plus countries would be a milestone, it is nevertheless a flawed agreement. We cannot become complacent: we need to keep working towards the Copenhagen goal and beyond."

Provided by University of Plymouth