

Expert reaction roundup: scientists and the UK climate champion respond to Arctic breakdown and extreme weather events ahead of UNGA high level meeting on Thursday 24 Sept

Professor Gail Whiteman, University of Exeter Business School and Founder of Arctic Basecamp - an overview on climate ambition:

Studies show that it's expensive to lose the Arctic and it's bad news for us if this happens.

To avoid the huge social and economic risks from Arctic change, governments need to have early and ambitious NDCs and make sure their covid economy packages are green and low carbon compliant. We encourage companies to unite behind the science, by having science based targets and making sure their goods and services are aligned starting now, not in the future. Sounding the alarm on the Arctic is one way we hope to see accountability from our leaders, who need to integrate the science into every finance and policy decision that they make. Scientists need to be at the decision-making table.

Dr. Jennifer Francis, Woodwell Climate Research Center - on what a disappearing Arctic means for the world:

The Arctic is changing and warming extremely rapidly. By losing Arctic ice and snow which reflect heat from the sun, we're making the Earth darker and worsening the existing effects of global warming by at least 25%. This extra warming accelerates sea level rise, and speeds up permafrost thaw, releasing extra carbon and methane into the atmosphere. Faster Arctic warming also reduces the temperature difference between the cold north and warmer south. That temperature difference fuels the jet stream, a fast river of wind that creates and steers weather around the northern hemisphere. A smaller temperature difference means weaker jet-stream westerly winds, which causes weather regimes to stall, creating long-lived weather conditions like drought, heat waves, cold spells, and stormy periods. The frequency of extreme events related to weather has tripled in a short period, of just 40 years. We expect this to worsen as the ice continues to melt.

Professor Julienne Stroeve, University of Manitoba & University College London - on the [news confirmed yesterday that we are facing near record Arctic summer sea ice loss](#), and the scale that different countries are responsible for this loss:

This summer puts another nail in the coffin. The one-off record sea ice minimums doesn't tell us so much about what's happening. What we are seeing this year is the result of long term decline, which is most closely linked to global warming from greenhouse gases. Over time we can track emissions and start to see how much each country is responsible for melting Arctic sea ice loss. For example in 2019, China was responsible for 30,000 square kilometers and the US responsible for 14,400 square kilometers of sea ice loss. Overall Greenland is not replenishing its mass and we're losing more of the ice sheet every summer, so this melt is still contributing to global sea level rise. The latest science tells us we're looking at a transformed arctic in the next 20 years, with no sea ice in the summertime.

Nigel Topping, UK High Level Climate Action Champion for COP26 - context on what this means for the real economy and UNFCCC / COP 26:

We have entered the era where the impacts of climate change are here and now. The IPCC Special Report on 1.5°C has had a galvanizing effect on all parts of society. The level of ambition and the clarity of a zero target is important, particularly when coupled with the recognition in boardrooms and cabinet offices that we are dealing with growing and serious risk. Decision makers need to take the science seriously and deliver serious change in the next five to ten years so we can hit Paris targets. But we also need to adapt to the impacts we have already locked in. Just as important as COP26, is the effort made by governments and businesses and cities ahead of November 2021. COP26 should be a crescendo of ambition, and not the only moment where we see pledges and change from governments.

Professor Gail Whiteman, University of Exeter Business School and Founder of Arctic Basecamp - response to [news that France is considering joining other countries in backing a proposed LNG pipeline in the Arctic](#):

The French government has been such a leader on the transition to the low carbon economy and they were vital architects of the Paris Agreement. The whole world stood with Macron after he said 'let's make the planet great again' in response to the news that the US was withdrawing from the Paris accord. In no way can this project be financed by the French government and we still view them as united behind the science. If they were to go ahead and back this, it would be a very sad day for the climate and science communities.

Dr. Jennifer Francis, Woodwell Climate Research Center - also in response to [the proposed LNG pipeline in the Arctic and new fossil fuel infrastructure](#):

Any resources spent on projects like the proposed LNG pipeline in the Arctic, when you look at the bigger picture of the extreme events and climate impacts we're already facing at just over 1°C, it's going in the wrong direction to build any infrastructure to support fossil fuel. We know the loss of Arctic sea ice is making it easier to exploit these opportunities, but it is still going to be a risky, dangerous, and expensive place to access these resources. If anything goes wrong, there is no way to clean up that catastrophe. There's really no upside to a project like this, other than for the fossil fuel industry to make even more money.

Professor Julienne Stroeve, University of Manitoba & University College London - what science tells about the idea that the Arctic has passed a tipping point:

We have submitted research to the next IPCC report which shows that we will lose summer sea ice under any future emission scenario. But it is possible to preserve and repair as much as possible. We are going to have to get innovative not just in mitigating, but also removing carbon from the atmosphere, and sooner rather than later.

Dr. Jennifer Francis, Woodwell Climate Research Center - how people respond to the idea that the Arctic has passed a tipping point:

A tipping point implies a cliff that we fall off and can't climb back up from. But really it's a continuous change. People are starting to recognise their own backyards are changing in ways they have no experience with. People know things are not normal. It doesn't matter where you live, whether you're facing more and stronger tropical storms this year, or seeing the fires resulting from drought and heatwaves, these impacts are driven in part by changes in the Arctic. And while we can't turn it around, we can lessen the severity of the changes.

Nigel Topping, UK High Level Climate Action Champion for COP26 - what we can do to protect the Arctic against further breakdown:

If anyone says there's nothing left to do, they haven't read the science. We just need to act quickly. We mustn't wait until 2050. Cars are a good example of how fast we can change. During Paris we thought combustion engines would be around until the 2070s and now we know it's pretty much game over for them sometime in the 2030s. We have the ability to change, but we all have to put in the work to do so. Scientists and engineers are offering us answers to this crisis and we need to enshrine them in policy and put solutions into action.

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