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[Which climate changes can be blamed on humans?](#)



Michael Marshall, reporter

The conclusions of the [last IPCC report](#) were unequivocal: it said, with [90% certainty](#), that greenhouse gases released by human activity were warming the planet. That was then and this is now, and since the IPCC's report came out in 2007 climate science has come under some criticism - rather a lot of it in fact. So it's no surprise that when new papers confirm the IPCC's conclusions, climate scientists are not shy about advertising them.

The latest example of such a paper, in press in [WIREs Climate Change](#), reviews a number of studies that have been done since 2007. It finds that there are definite human influences on a host of aspects of the climate, all of them driven by the rising temperatures.

All the papers that [Peter Stott](#) of the UK Met Office and colleagues reviewed attempted to find a human "fingerprint" on the climate. They focus on data that has been collected over the last century. They calculate the relative influence that different factors - including natural variations like changes in the Earth's orbit, and human-made influences like carbon dioxide emissions - have on the changing climate.

According to Stott's overview of published research papers, there is now a confirmed human fingerprint (links go to the original papers) on:

- The [rise in global surface air temperature](#);
- The rise in surface air temperature [over every continent, including Antarctica](#);
- The [rise in atmospheric humidity](#) (caused by the higher air temperatures);
- The [rise in precipitation](#) (rain, snow, etc) around the world, as a result of the higher humidities;
- [Shifts in precipitation](#): dry tropical regions are getting drier while wet regions closer to the poles [are getting wetter](#);
- The [huge losses](#) of Arctic summer sea ice;
- The [rise in surface ocean temperature](#);
- [Increasing salinity](#) in the Atlantic Ocean.

The researchers say that a fingerprint study of this kind has not yet been performed for [sea level rise](#), and that we still cannot be sure whether humans have had an effect on the [number](#), or [intensity](#), of hurricanes.

It's hard to take the promotion that Stott's review received - it was press released and presented at a press conference - as anything other than a response to the [unremitting onslaught](#) of [climategate](#)-related accusations being [hurled at climate scientists](#) at the moment.

Will it make much of a difference to the controversy? Hard to say. But it's worth pointing out

that very little of the fallout from climategate has had to do with the evidence for human-driven climate change. Rightly or wrongly, journalists seem more interested in flaws in climatologists's characters than the strength of their data.