

The Growth of Attribution Science and Its Application to Law

Supplement to Detection and Attribution of Climate Change

Executive Summary¹

Attribution science, the body of scientific research that investigates links between greenhouse gas emissions and climate change, extreme weather and other events, and impacts is developing rapidly.

The number of scientific publications in the attribution field has grown considerably over the last few years. Most of this research is on impact attribution, the category of attribution science that examines the relationship between climate change and impacts on people, physical things, and ecosystems.

Recent scientific assessment reports like the federal government’s Fifth National Climate Assessment (NCA5) reflect this growth and highlight new key takeaways. Scientists have advanced their ability to attribute certain types of events to climate change, such as heatwaves and rainfall. Scientists are also making progress on attributing other types of events such as wildfires, and their impacts such as on human health, to climate change. Emerging satellite data may bolster these kinds of analyses.

Attribution science is appearing more frequently in U.S. law and policy. In a handful of cases, plaintiffs have incorporated attribution studies in their complaints seeking to hold private company defendants liable for harms from climate change. State policy is also beginning to incorporate attribution science. New York and Vermont have enacted “climate superfund” laws that create a framework for recovering costs of damages from historical emitters, to be used for various climate adaptation and resilience projects. The implementation of these bills (both of which have been challenged in court) will be informed by attribution studies that allocate emissions to specific entities.

Looking ahead, “rapid” attribution of extreme events, methodologies that allow for attribution assessments in the immediate aftermath of or even during a particular event, will be increasingly important for climate change decision-making. First developed by an international scientific collaboration called World Weather Attribution, new rapid attribution initiatives are being undertaken around the world to enable a wider understanding of the ways in which climate change is impacting extreme events and how we might adapt to them.

¹This is a summary of The Growth of Attribution Science and Its Application to Law supplemental paper authored by John Doherty.