

Climate Change Drove the April Mediterranean Heatwave

By Don Sutherland

April closed with searing heat across northern Africa and Spain. Cordoba, Spain reached a blazing 38.8°C (101.8°F), setting a new Spanish and European higher temperature record for April. Even higher temperatures were recorded across Algeria and Morocco.

In recent years, heatwaves have grown more extreme. Repeated attribution studies have linked the rising heat to anthropogenic climate change. That body of evidence alone suggested that the record-setting April heat in the Mediterranean Region was not the result of natural factors, but made possible by climate change.

The World Weather Attribution (WWA) project has now confirmed the link to climate change. In a just-released [study](#), the WWA concluded that the heat was made more intense and at least 100 times more likely due to climate change. The paper explained:

While Europe and North Africa have experienced heatwaves increasingly frequently over the last years, the recent heat in the Western Mediterranean has been so extreme that it is also a rare event in today's warmer climate. Our estimate of observed temperatures averaged over 3 days were estimated to have a return period of approximately 400 years (at least 60 years) in the current climate, meaning they have approximately a 0.25% chance of happening in any given year.

To estimate the influence of human-caused climate change on this extreme heat we combine climate models with the observations. Observations and models both show a strong increase in likelihood and intensity but the change is systematically lower in the models than in the observations. The fact that extreme heat is increasing faster than climate models simulate is a known problem in summer in Western Europe, in all climate models, and is also found here.

The combined results, giving an increase in the likelihood of such an event to occur of at least a factor of 100, is therefore likely too conservative. At the same time, a heatwave with a chance of occurrence of 0.25% in any given year (return period of 1-in-400 years) would have been at least 2C cooler in a 1.2°C colder world.

At the time this blog is being published, parts of Southeast Asia had seen some of their most intense heat on record. Exceptional warmth is forecast to continue across parts of northern Canada this week.

More such extreme heat is likely as the spring advances into summer with only the location uncertain.