

Climate Changes Fuel Civil Strife And Global Conflict, Says New Report

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Climate change has fanned the flames of global conflict throughout human history, according to new research.

The study shows a similar pattern all over the world, with even small shifts in temperature and rainfall leading to surges of violence.



Is the Syrian conflict being fanned by temperature rises?

Examples include domestic assaults in India and Australia, murders in the US and Tanzania, ethnic conflict in Europe and southern Asia, and civil strife throughout the tropics.

Changes in weather patterns were also linked to the collapse of Mayan and Chinese empires.

A future temperature rise of 2C due to global warming could increase the rate of intergroup conflict by more than 50%, it is claimed.

The scientists used new methods to re-analyse data collected from 60 existing studies looking at the effect of climate on human conflict and violence.

"The results were striking," said lead researcher Dr Solomon Hsiang, from the University of California at Berkeley.

"We need to understand why climate changes

cause conflict so we can help societies adapt to these events and avoid the violence. At the same time, we should carefully consider whether our actions today are making our children's world a more dangerous one."

The study adopted a broad definition of conflict and assessed how aspects of climate such as rainfall, drought and temperature relate to various forms of violence.

Three sources of conflict were identified by the researchers: personal violence and crime such as murder, assault, rape and domestic abuse; intergroup violence and political instability such as civil wars and riots, and institutional breakdowns including the collapse of entire civilisations.

All three categories showed "systematic and large" responses to changes in climate, with the impact on intergroup violence being the strongest.

Conflict patterns were most affected by temperature. All 27 studies of modern societies found a positive association between higher temperatures and greater violence.

The research, published in the journal *Science*, involved converting shifts in climate into location-specific statistical markers known as standard deviations.

"We found that a one standard deviation shift towards hotter conditions causes the likelihood of personal violence to rise 4% and intergroup conflict to rise 14%," said co-author Marshall Burke, from the university's Department of Agricultural and Resource Economics.

"For a sense of scale, this kind of temperature change is roughly equal to warming an African country by 0.4°C (0.6°F) for an entire year or warming a United States county by 3°C (5°F) for a given month. These are moderate changes, but they have a sizeable impact on societies."

Mr Burke added: "Our results shed new light on how the future climate will shape human societies. The findings of the study suggest that a global temperature rise of two degrees Celsius could increase the rate of intergroup conflicts, such as civil wars, by over 50% in many parts of the world."



Professor Edward Miguel, director of the Centre for Effective Global Action at the Berkeley campus, said: "It's possible that future societies might figure out better ways to cope with hot temperatures and variable rainfall, and indeed we hope that they will. Nevertheless, the authors argue that it is dangerous to assume that people will cope well to extreme climate when they have not done so historically."

More work is needed to discover just why climate has such a strong effect on conflict and violence, say the scientists.

"We're in the same position that medical researchers were in during the 1930s," said Dr Hsiang. "They could find clear statistical evidence that smoking tobacco was a proximate cause of lung cancer, but they couldn't explain why until many years later. In the same way, we can show that climatic events cause conflict, but we can't yet exactly say why."

"Currently, there are several hypotheses explaining why the climate might influence conflict. For

example, we know that changes in climate shape prevailing economic conditions, particularly in agrarian economies, and studies suggest that people are more likely to take up arms when the economy deteriorates, perhaps in part to maintain their livelihoods."