



## The wind is changing – Hurricanes and Climate Change Perceptions

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In the scientific community, there is vast consensus that human activity caused the climate to change significantly with regards to pre-industrial times and actions need to be taken immediately to prevent the worst scenarios from materializing. In the general public, however, such widespread support cannot be observed and is even completely lacking in some parts of the population. To a large part, this great heterogeneity seems to be built on the volatile effects of personal weather experiences on climate change perceptions. Individuals reverting to this source of information to make inferences about the climate are prone to attribution biases and other psychological fallacies, failing to grasp the true magnitude and strength of ongoing climate change.

This paper investigates this mechanism by looking into the effects of the 2020 hurricane season on climate change perceptions. After identifying the strongest hurricanes in the USA, Google Trends data is used to extract the salience as perceived by the population of each of these events. This data is then combined with a rich survey module containing responses on attitudes and behaviors on climate change to uncover the distinct building blocks of how hurricanes can shape climate change beliefs.

It can be observed that during periods of hurricane exposure, people worry more about climate change and display higher motivation to act in favor of climate change mitigation. The effect intensifies with the magnitude of the tropical storm and the length of the entire hurricane season. In a second part of the analysis, the focus is laid on different effect magnitudes for distinct personal characteristics. Political ideology in particular has been identified to heavily distort how people learn from weather events, emphasizing that how climate extremes are evaluated is only a reflection of their previously held core beliefs. This makes it increasingly hard to convince skeptical (e.g. conservative) peer groups of the challenges lying ahead. In this paper however, an ideology gradient can be discovered, showing a stronger effect of hurricane exposure for Conservatives than for Liberals. This can mostly be explained through a higher baseline worry by Liberals about climate change, and thus a lower margin to react to the occurrence of hurricanes. Conservatives, traditionally being more climate change skeptical, have scope to update their climate change beliefs and do so in the face of extreme weather events in this study.

Overall, these findings confirm previous literature on the positive impact of hurricanes on belief in and worry about climate change but open up a whole new ally on the distinct effect on conservative parts of the population. The positive impact on generally climate change skeptical individuals can spark hope and lay the foundation for further research into how to convince those that were thought to be invincible, to ultimately win widespread support and consensus for climate change action. This is what is ultimately needed to be able to win support for powerful policies enacted by governments who can draw on majorities in parliaments, and finally achieve large-scale changes in behavior to fight against climate change.