

# The Association between Experience of Extreme Weather and Pollution with Participation in Environmental Advocacy across Age Groups



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## Introduction

- Extreme weather events such as hurricanes, droughts, and wildfires **cost the U.S. \$182.7 billion** in 2024 and are expected to increase in frequency and intensity due to climate change. Air pollution exposure and drinking water pollution remain prominent threats to public health in the U.S. (NOAA, 2025; Thakrar et al., 2020; Keiser & Shapiro, 2019).
- Understanding what motivates Americans to be environmental advocates is key to mobilizing support for pro-environmental policies.
- Exposure to extreme weather has been found to **reinforce or even change opinions about climate change** but not lead to personal behavior changes (Howe, 2021; Rüttenauer, 2023). Other studies found that those affected by flooding display a greater willingness to support sustainable policies, and perceptions of air pollution are heightened by personal experiences (Demski et al., 2017; Bickerstaff & Walker, 2001).
- Older Americans are frequently overlooked as potential climate advocates despite often having more accumulated experience of adverse environmental impacts (Moser, 2017; Patskanick et al., 2023; Bogado, 2025). **Few studies have examined the following:**
  - Whether age group modifies the relationship between experience of extreme weather/pollution and environmental advocacy.
  - The relationship between experience of extreme weather/pollution and specific advocacy actions including signing petitions, attending protests, joining advocacy groups, and donating money to pro-environmental groups.

## Methods

### Sample

- Adults 18 years or older** living in noninstitutional housing in the U.S. (n=4032) were surveyed as part of the 2021 General Social Survey (GSS) Cross-section Study.

### Measures

- Experience of adverse environmental impacts was measured by aggregating answers from questions asking: "To what extent was your neighborhood was affected by "Air pollution," "Water pollution," and "Extreme weather events such as severe storms, droughts, floods, heat waves, cold snaps, etc." over the last twelve months?"
- Environmental advocacy was measured by aggregating answers from questions asking participants questions about signing petitions, joining environmental groups, donating money, and participating in protests over the last five years.
- Age brackets were created by asking respondents their age and sorting respondents into groups of 18-50 years old and >50 years old.

## Research Questions

- Is personal experience of air pollution, water pollution, and/or extreme weather events associated with environmental advocacy among American adults?
- If so, is this relationship modified by age group (18-50 years vs >50 years)?

## Results

### Univariate

- 39.7% of respondents had experienced extreme weather, air pollution, and water pollution in the last 12 months.
- 63.8% of respondents did not participate in any environmental advocacy in the last five years.

### Bivariate

- A Chi-squared test demonstrated a **significant positive relationship** ( $p < 2.2e-16$ ) **between experience of extreme weather/pollution and environmental advocacy.**
- A simple logistic regression revealed that experience of extreme weather/pollution is significantly associated with environmental advocacy **if people have experienced 2** ( $p = 2.61e-08$ ) **or 3** ( $p = 3.08e-13$ ) **but not 1** ( $p = 0.0533$ ) **extreme weather/pollution events.** A second simple logistic regression found that **age is significantly correlated with environmental advocacy** ( $p = 0.000682$ ). Participants 18-50 years old were 1.4 times less likely to participate in environmental advocacy than those >50 years old (Figure 1).

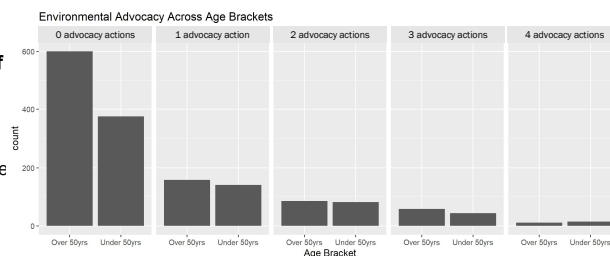


Figure 1. Graph displaying age bracket vs. environmental advocacy

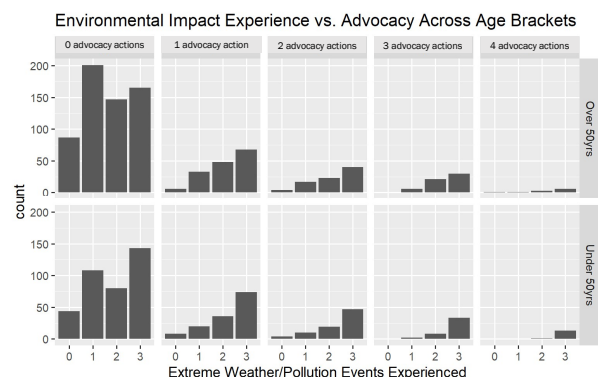


Figure 2. Multivariate graph displaying environmental impact experience vs. advocacy across two age groups

## Discussion

- The positive relationship between extreme weather/pollution and environmental advocacy corroborates certain findings in the literature.
- Multiple experiences of adverse environmental impact is associated with greater advocacy. The most active advocates largely experienced all three types of adverse environmental impacts.
- People 18-50 years old are less likely to participate in environmental advocacy except when they have experienced all three types of environmental impacts.** This contradicts widespread assumptions that younger people are more likely to be climate advocates.
- Further research should consider the following:
  - Causation vs correlation (ask participants if they believe their experience of adverse environmental impacts influenced their advocacy participation)
  - Follow a specific group of people after an extreme weather/pollution event

## References

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