



# Expectations of Future Climate Change Harm and Costs in the Baltimore Area

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## 1. Introduction

As Baltimore-area communities face increasing threats from climate events such as flooding and extreme heat, knowing how people may form different assessments of the impact of climate change on their life and their perceptions about how it may affect them. For Baltimore to have a climate resilient future, solutions will need to be responsive to differences in assessments and perceptions when investing in climate resilience that could inform what adaptation and mitigation strategies may be feasible.

In this research brief, we examine the extent to which Baltimore-area residents are concerned about the future impacts of climate change and how those concerns differ by race, income, age, and geography. We use data from the 2023 Baltimore Area Survey (BAS) to report the share of Baltimore-area residents who reported that they are concerned that climate change will harm them and how they think climate change will affect costs in the coming years. We focused on the level of concern about climate change residents reported feeling to measure the extent to which people are worried about personal harm from climate change. We also asked them about how much they thought climate change would affect costs in the future. Individual forecasts of whether climate change will lead to higher costs can help understand why residents evaluate the trade-offs of future policies differently and know how different groups are concerned about the financial burden involved.

To our knowledge, this is the first representative survey of Baltimore-area resident perceptions of climate change. This report provides useful information that can help us better understand the perceptions and concerns of our neighbors and the broader Baltimore-area community. These findings can also help policy makers and practitioners better understand possible reactions when discussing climate change concerns and adaptation strategies with different communities and demographics in the Baltimore-area.

## 2. Data

This research brief uses data from the 2023 Baltimore Area Survey. The responses came from 1,352 Baltimore-area respondents, 818 from Baltimore City and 534 from Baltimore County. The data and the findings we report here are weighted to be representative of the adult, English-speaking population of Baltimore City and Baltimore County. The overall margin of error for the whole sample is  $\pm 4.2\%$ .

The two questions asked in the survey that we analyze are:

1. "How concerned are you, if at all, that global climate change will harm you personally at some point in your lifetime?" Respondents could answer "Very concerned", "Somewhat concerned", "Not too concerned", or "Not at all concerned".
2. "Some people believe that dealing with climate change will make people and businesses pay higher costs while others think that dealing with climate change will help people and businesses save money. Overall, in the next five years, do you think that dealing with climate change will lead people and businesses in the Baltimore area to..." Respondents could answer "Pay much higher costs", "Pay somewhat higher costs", "Neither pay higher costs nor save money", "Save somewhat more money", or "Save much more money".

### 3. Findings

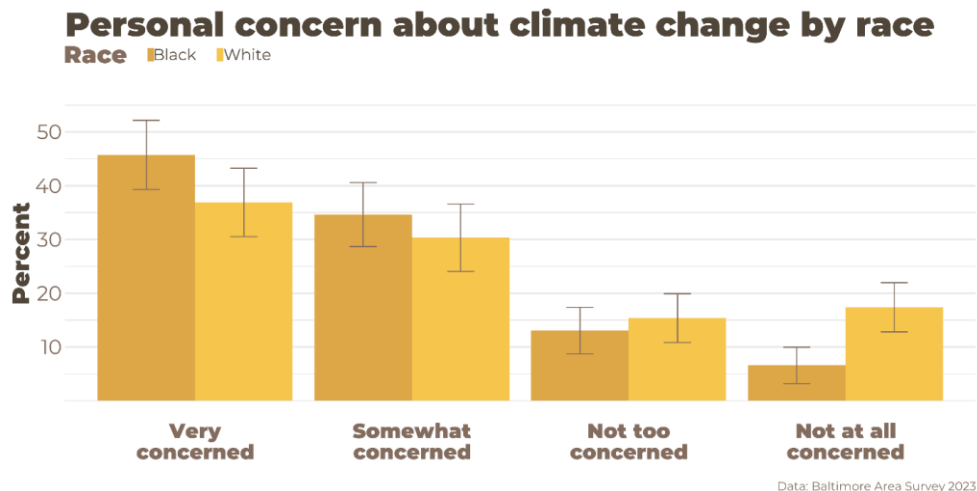
Overall, 73% of Baltimore-area residents are concerned that climate change will personally harm them at some point in their lifetime. This is significantly higher than a 2023 national estimate of 46% of adults who think global warming will harm them personally, and higher than 50% who are concerned in the state of Maryland ([Howe et al, 2023](#)). A similar share of Baltimore-area residents, 70%, think that dealing with climate change will lead people and businesses to pay higher costs in the next five years, with the plurality of respondents (43%) believing that climate change will lead to somewhat higher costs. Residents of Baltimore City are more concerned (79%) about future personal climate harm than residents of Baltimore County (69%). However, County residents are more likely (74%) to say that climate change will lead to higher costs than City residents (66%).

#### Racial Differences

Black Baltimore-area residents are more likely than White residents to report being concerned about future personal harm from climate change. About 80% of Black respondents answered that they are at least somewhat concerned about personal harm compared to 67% of White respondents. Figure 3.1 breaks these responses out by the four response options to show the distribution.

**Figure 3.1: Personal concern about climate change by race**

About 80% of Black respondents answered that they are at least somewhat concerned about personal harm compared to 67% of White respondents



When considering the costs of climate change in the next five years, Black and White respondents did not have a statistically different opinion, with around 70% of both groups

believing that climate change will raise costs for people and businesses.

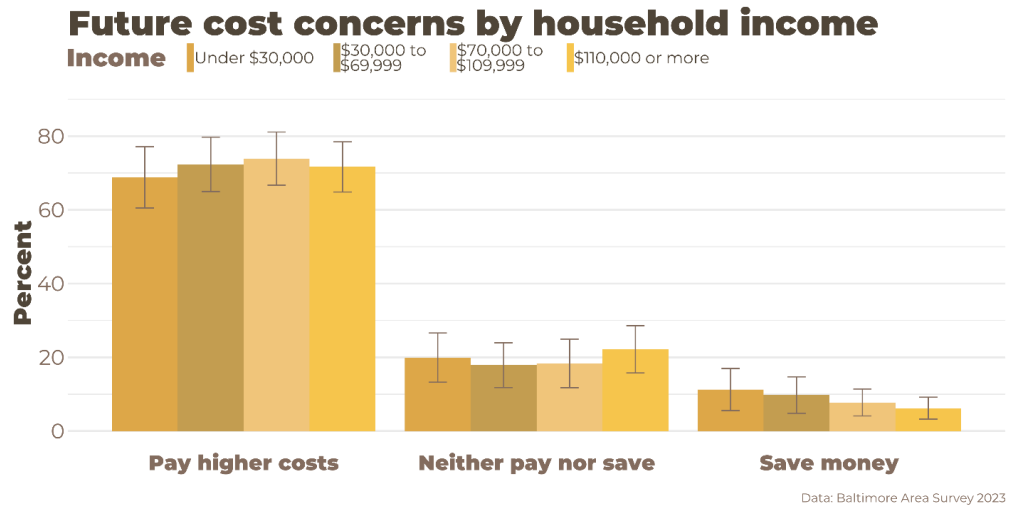
### Age Differences

Previous research on perceptions of the future threat of climate change found differences of concern by age, with younger people generally being more concerned than older people ([Shwom et al 2015](#), [Weber 2016](#), [Cutler 2016](#)). We analyzed differences in responses across four age categories in the Baltimore-area: 18 to 25, 26 to 49, 50 to 74, and 75 and older. We find no significant difference by age group in the share of residents who are concerned about future personal harm from climate change. Similarly, we find no significant difference by age group in belief about the future costs of climate change for people and businesses. In the Baltimore-area, older adults are as likely to be concerned about climate change harm and cost as younger adults.

### Class Differences

Previous research at the national level and in other U.S. cities also found that perceptions of the impact of climate change vary by income level, with lower-income individuals perceiving higher risk ([Cutler 2016](#), [Cutler et al 2018](#), [Semenza et al 2008](#), [Yazar et al 2022](#), [Mohai & Bryant 1998](#)). To look at class differences in perceptions of climate change in the Baltimore-area, we group respondents into four household income groups: households that annually make less than \$30,000, \$30,000 to \$69,999, \$70,000 to \$109,999, and greater than \$110,000. For reference, the median household income in Baltimore City is \$59,623 and in Baltimore County is \$90,904. Analyzing the responses across these income groups reveals no statistically significant difference in either the concern about future personal harm due to climate change or about the costs of climate change for people and businesses over the next five years.

**Figure 3.2: Future cost concerns by household income**

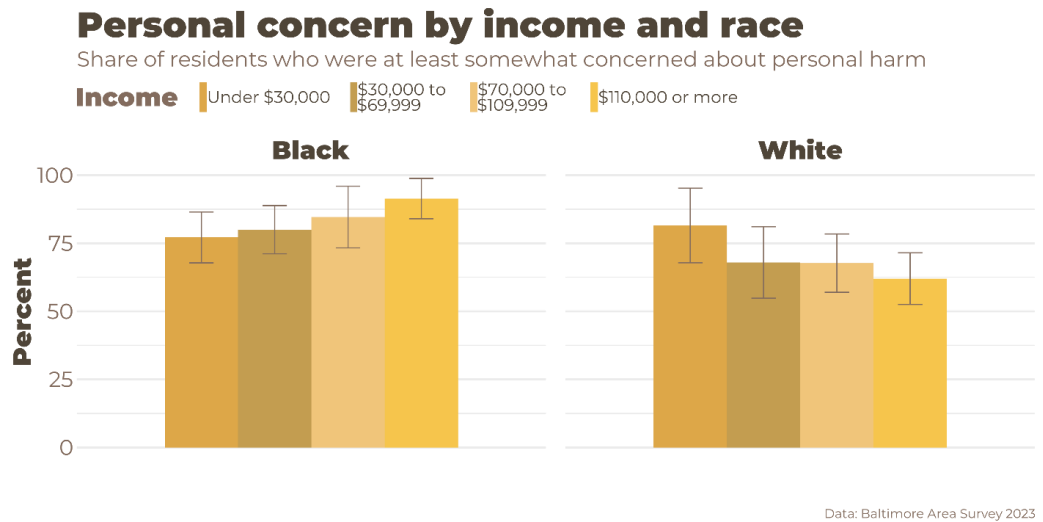


Among Black households with annual incomes over \$110,000, 91.4% are personally concerned about future climate harm compared to just 62% of White residents.

### Race and Class Differences

Finally, we look at the interaction of race and class, grouping Black and White respondents into the aforementioned income groups. We find significant differences at the intersection of race and income, where wealthy Black residents are the most concerned group about future climate change harm among the combined race/income groups. Among Black households with annual incomes over \$110,000, 91.4% are personally concerned about future climate harm compared to just 62% of White residents in the same income group. While the concern about future climate change among Black residents was lower among those with less income, concerns about future climate harm is highest among White residents with the lowest income, a pattern shown in Figure 3.3. Among people in households making less than \$30,000 per year, White residents are slightly more likely than Black residents to be concerned about future climate harm, though the difference may have been due to statistical chance.

**Figure 3.3: Personal concern by income and race.** Share of residents who were at least somewhat concerned about personal harm.



A similar pattern existed when residents considered future climate costs. Approximately three-quarters of Black residents in the highest income group think that climate change will lead to higher costs for people and businesses in the next five years. The share was similar among White residents in the *lowest* income group. In contrast, only 66% of Black residents with incomes under \$30,000 think that climate change will lead to higher costs, though we cannot rule out that the difference may have been due to statistical chance. Looking at respondents who believe that climate change will lead to people and businesses saving money in the next five years, Black residents with incomes under \$30,000 were twice as likely (14%) to report this than Black residents with incomes over \$100,000. Among White residents, there was no difference in the share of people by income who believe that climate change will lead to savings, with about 5% of White respondents responding this way across all income groups.

## 4. Conclusion

We found that the overall share of Baltimore-area residents who are concerned that climate change will personally harm them in the future is high compared to the nation and the state of Maryland, with about three-quarters of residents expressing some level of concern. A similar share of Baltimoreans think that climate change will lead people and businesses to pay higher costs in the next five years.

Our analysis of differences between demographic groups led to several important findings. First, in contrast to national surveys that found that younger people are more concerned about climate change, we did not find significant differences in concerns about climate change between age groups in Baltimore. Second, we found racial differences, with Black Baltimore-area residents reporting that they were, on average, more concerned about climate change than White Baltimore-area residents. We found, however, differences at the intersection of race and class with high-income Black Baltimore-area residents being more likely to express concern about climate change than high-income White Baltimore-area residents, with the gap being largest among the highest income groups.

The interaction of race and income shows that there are complex relationships when considering who may be affected. At the most basic level, the results show it is important not to assume that race and income can serve as measures of one another. Delving deeper into the reasons why concerns about climate change vary by income in different directions for Black and White Baltimore-area residents may improve efforts to implement adaptation and mitigation policies that will likely be necessary in the coming years.

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## What is Baltimore Area Survey?

The Baltimore Area Survey (BAS) is a new, annual, representative survey of Baltimore City and County residents being run by Johns Hopkins 21st Century Cities Initiative (21CC). The BAS will help scholars, community members, and policymakers learn more about the Baltimore area's strengths and challenges from residents. 21CC affiliated researchers will partner with Baltimore community leaders and policy makers to identify pertinent topics to study and then field a survey with questions on those topics to a representative address-based sample of Baltimore City and Baltimore County residents every year. Having the survey in the field on an annual basis means that policy makers and community leaders are never more than a year away from asking important questions and having timely data. The survey will also allow for measuring change over time and looking at perceptions and opinions before and after significant events.

### Find out more:

**Website:** [21cc.jhu.edu/research/baltimore-area-survey](http://21cc.jhu.edu/research/baltimore-area-survey)

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