

Research & Policy Brief Series

Perceptions of Risk and Behavior: Climate Change & Weather-Related Relocation*

By Erin Fenton, Robin Blakely-Armitage, and David L. Kay, Cornell University

What is the Issue?

The eastern US coast, including inland estuarine areas, has experienced an increase in severe weather impacts in recent years. Such events are predicted to increase in both frequency and intensity with climate change. Long term changes such as rising sea levels worsen flooding and put coastal and estuarine communities at special risk. People, businesses and governments located in high risk areas are increasingly confronted with the question of what to do, either in anticipation or in response. Many prefer to adapt in order to stay in place. But increasing frequency and cost of damage raises the probability of “climate migration” - the planned or unplanned move to what are perceived as lower risk locations. Some of the moves involve national border crossings, but many do not. According to the Internal Displacement Monitoring Centre, over 1.6 million people were internally displaced temporarily or permanently as a result of “natural” disasters including climate or weather-related events in the United States in 2017.¹ The issue of climate migration is important to consider at many levels, e.g. individual, neighborhood, and community. Not only are individuals affected by moving from one place to another (often within the same community), but communities that gain as well as those that lose population are affected. Along with understanding perceptions of personal risk, it is important to also consider perceptions of migration at the community-level.

While the U.S. has already experienced some climate-based displacement, large scale internal population shifts due to rising sea levels and similar climate changes are not yet seen as a major issue. However, there are many indications that voluntary and forced relocation will increase as climate change brings more extreme weather-related events to different areas of the country. Our research has begun to explore individual and community perspectives on climate and weather-related issues and impacts on community quality of life; in particular we are interested in how perceptions of flood risk might influence individual plans to move/relocate, and local policies that support at risk neighborhoods to adapt or relocate. Anticipating increased risk exposure in the future, we seek to establish a better baseline understanding of the current situation. In this report, we discuss national survey responses to questions about individuals’ climate and weather-related risk perceptions and their anticipated subsequent behavior.

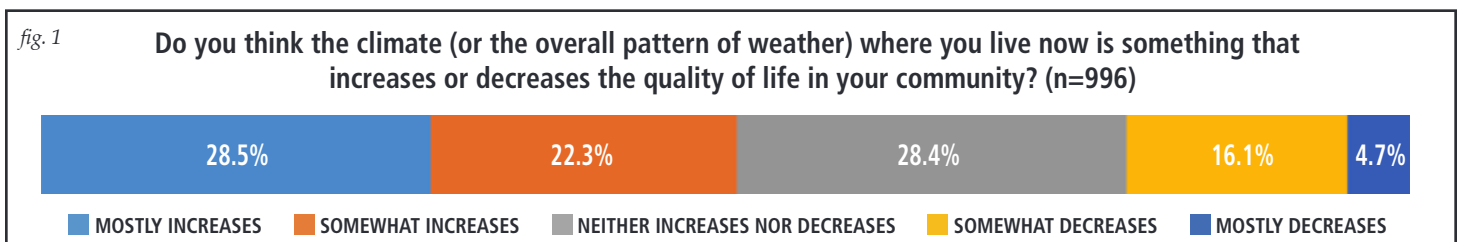
Exploring Perceptions of Risk and Behavior

In order to probe perceptions of climate and weather-related risk and influences on relocation or migrations plans, we included several questions in the 2016 Cornell National Social Survey (CNSS), an annual, nationally representative survey of 1,000 individuals age 18 and over.² Survey questions are submitted by researchers at Cornell University and cover a range of topics. Standard demographic information – such as age and location – is also included in the survey. We focus on three of our survey questions in this publication:

1. *Do you think the climate (or the overall pattern of weather) where you live now is something that increases or decreases the quality of life in your community?*
2. *What level of influence do you think weather or climate-related issues could have on whether you move to a new location over the next ten years?*
3. *What type of weather or climate-related factors would be the most likely to cause you to move away from your current residence?*

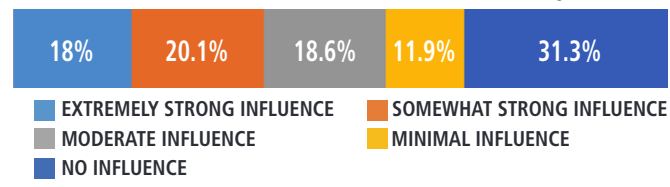
Many factors can influence perceptions of a community’s quality of life. While we do not investigate the full range of factors, a majority (50.5%) of survey respondents thought that the climate or weather where they live *increases* the quality of life in their community. Almost a third (28.4%) said that the climate or weather had no influence, while a fifth (20.8%) indicated that it decreased the quality of life in their community (see Figure 1).

While over 50% of survey respondents thought that the climate or overall weather patterns where they live *increased* the quality of life in their community, 56.7% reported that it would have a “moderate” to “extremely strong” influence on whether they moved to a new location within the next ten years. Over two-fifths (43.2%) of respondents indicated that weather/climate would have “minimal” or “no influence” on a potential move over the next decade (See Figure 2). Episodes of extreme temperature, either “very cold” or “very hot” spells, were cited by 45% of those who indicated weather or climate-related issues would likely cause relocation. “Other” weather/climate events, heavy snowfalls, and storm-related flooding followed (19%, 11%, and 9%, respectively). Droughts, strong winds, rising sea levels, and wildfires were less frequently identified as being likely to cause residents to move from their current residence.



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fig. 2 **What level of influence do you think weather or climate-related issues could have on whether you move to a new location over the next ten years?**



“Climate or weather-related issues” is a fairly broad concept, and the influence they have on one’s relocation plans can vary by specific type as well as by geographical location, among other factors. Of the 38% of respondents who indicated that weather or climate-related issues would have an “extremely strong” or “somewhat strong” influence on whether they move to a new location over the next ten years, the following factors were cited as most likely to *cause* such a move (n=376):

fig. 3 **What type of weather or climate-related factors would be the most likely to cause you to move away from your current residence?**

Storm-Related Flooding	9%
Rising Sea Levels	4%
Very Heavy Snowfall	11%
Spells of Very Cold Temperatures	28%
Spells of Very Hot Temperatures	17%
Very Strong Winds	5%
Large Scale Wildfires	1%
Lack of Snow or Rain (Drought)	7%
Other Weather or Climate Event	19%

Episodes of extreme temperature, either “very cold” or “very hot” spells, were cited by 45% of those who indicated weather or climate-related issues would likely cause relocation. “Other” weather/climate events, heavy snowfalls, and storm-related flooding followed (19%, 11%, and 9%, respectively). Droughts, strong winds, rising sea levels, and wildfires were less frequently identified as being likely to cause residents to move from their current residence.

Regional differences (not shown here) also exist. For most regions, the climate/weather factor cited is well-aligned with typical regional weather patterns. For example, 35% of respondents living in the Northeast and 40% of respondents in the Midwest cited “spells of very cold temperatures” as the factor most likely to influence relocation (followed by “very heavy snowfall”). “Storm-related flooding” was cited more frequently by respondents living in the South, and “spells of very hot temperatures” were cited by 21% of Southerners and 19% of Westerners as most likely to cause them to move from their current residence.

Influence of Age

Demographic characteristics, such as age, can also influence risk perception and associated behavioral responses. To explore whether

age played a factor in survey respondents’ answers, responses were grouped as follows: ages 18-40 (Group 1), ages 41-61 (Group 2), and ages 62+ (Group 3). Groups 1 and 2 were more likely to answer that weather or climate-related factors would influence a move to a new location over the next ten years than respondents in Group 3; the most significant difference in mean response was between Group 1 and Group 3 (p=.00035).

These results follow other documented internal migration patterns as they relate to life stages. Those in the younger cohorts – particularly Group 1 – may be more likely to move due to social or cultural factors, such as education, starting a new job, or marriage, and climate or weather-related circumstances may be included in that list. Conversely, members of Group 3 are less likely to move overall, regardless of weather or climate-related factors. This group may simply move less than younger individuals, although propensity to move may increase around the age of retirement.³

Survey respondents in Group 3 were less likely to indicate that climate or weather-related factors would influence whether they would relocate over the next ten years, yet recent research shows that this group may be more vulnerable to climate change risks – such as extreme temperatures – than younger cohorts.⁴ As communities develop climate resiliency plans, it is vital that outreach and education efforts address the diversity of residents in a community, including vulnerable populations.

Conclusions

Our results show that well over half of CNSS respondents think that weather and climate could have a moderate to extremely strong effect on whether they would relocate over the coming decade, and that long spells of heat and cold are the climate-related concerns most likely to prompt such a move. This data suggests that climate-related issues are on the minds of many Americans and are important influences on the way they think about future relocation.

At the same time, past research on the reasons Americans have *actually* moved points in a very different direction. Of the roughly 10+% of Americans that moved in 2012-2013, climate-related factors barely register as a primary motivation. Consistently, of the 19 motivations the U.S. Census has tracked since 1998, housing needs and preferences, employment status, and factors pertaining to family account for over 97% of the “main reasons for moving”. In 2013, as had also been true in 1999, “change of climate” and “natural disaster” were listed by only a very small fraction of respondents.⁵

The difference between CNSS survey results about future moving behavior and the Census data on past actual behavior is not surprising in and of itself. We know that attitudes and intentions are not perfect predictors of actual behavior.⁶ However, in the face of currently changing weather patterns, the acceptance of climate change among most members of the public⁷, and the remarkable levels of influence respondents said these issues could have on their future moving behavior, it seems probable that climate and weather will influence future moving behavior in ways that historical data cannot predict. Our ongoing research is designed to delve much more deeply into these and related issues.

¹<http://www.internal-displacement.org/countries/united-states>

²Not all questions yielded 1,000 valid responses

³Bernard, A., Bell, M., & Charles-Edwards, E. (2014). Life-Course Transitions and the Age Profile of Internal Migration. *Population and Development Review*, 40(2), 213-239. Retrieved from <http://www.jstor.org/stable/24027921>

⁴Filiberto, D., Wethington, E., Pillemer, K., Wells, N. M., Wysocki, M., & Parise, J. T. (2010). Older people and climate change: Vulnerability and health effects. *Generations*, 33(4), 19-25. Retrieved from <https://search.proquest.com/docview/89257108?accountid=10267>

⁵See <https://www.census.gov/prod/2014pubs/p20-574.pdf> and <https://www.census.gov/library/working-papers/2016/demo/SEHSD-WP2016-22.html>

⁶See eg Bagozzi, R.P. 1981. Attitudes, intentions and behavior: a test of some key hypotheses, *J. of Personality and Social Psychology*, 41(4):607-627 Azjen, Icek. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* Volume 50, Issue 2, December 1991, Pages 179-211

⁷Leiserowitz, A., Maibach, E., Roser-Renouf, C., Feinberg, G., & Rosenthal, S. (2015). Climate change in the American mind: October, 2015. Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication. <http://climatecommunication.yale.edu/wp-content/uploads/2015/11/Climate-Change-American-Mind-October-2015-1.pdf>

