

## Climate Change Risks and Vulnerable Retirees

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What climate change risks are retirees exposed to? Taking a macro-level view, they are the same as those experienced at all ages; these risks include, for example, property damage, mortality, morbidity, and displacement risks. However, taking a closer look, because of their sensitivities to some of these risks, many retirees are likely to bear a proportionately greater share of these risks than younger-age adults.

This is primarily due to their increased vulnerability to such damages. The Intergovernmental Panel on Climate Change (IPCC) defines *vulnerability* as “the propensity or predisposition to be adversely affected”<sup>1</sup>. As such, vulnerable populations are those who tend to be more exposed and sensitive to climate-related changes than the average individual. These include those in both lower socioeconomic groups in more developed countries and those in less developed and developing countries, especially those in rural areas. Many retirees are vulnerable to these risks due to their less-protected property and fragile health. The objective of this essay is to discuss this vulnerability to the retired population, especially as retirees age.

According to the IPCC, vulnerability to climate change hazards encompasses the following elements:

- Exposure – the extent to which an individual or entity could be exposed to damage or loss by climate change or its effects;
- Sensitivity – the degree to which people or communities are affected by climate change, either adversely or beneficially; and
- Adaptive capacity – the ability of people or communities to adjust or respond to adverse impacts and take advantage of potential opportunities that arise.

Becoming a retiree does not suddenly transform an individual into being vulnerable. However, certain aspects of being a retiree can increase that person’s vulnerability to these risks, such as ill health as a result of the aging process and moving toward a reduced and relatively fixed income<sup>2</sup>, both of which can introduce financial stress and reduce that person’s adaptive capacity. As retirees age, their health and mortality become more sensitive to many climate change hazards.

Vulnerability can be affected by one or more factors, including age, health/disability/fragility status, location (e.g., closeness to exposure and support), available healthcare and safety infrastructure, mobility and access to transportation, adaptation measures taken and ability to change, access to insurance protection, personal and family resources, and socioeconomic and migrant status.

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<sup>1</sup>IPCC (2017). “Definition of Terms Used Within the DDC Pages”. Glossary. [www.ipcc-data.org/guidelines/pages/glossary/glossary\\_uv.html](http://www.ipcc-data.org/guidelines/pages/glossary/glossary_uv.html)

<sup>2</sup> Other than from Social Security benefits that are indexed to the Consumer Price Index in the United States.

The at-risk population are those in the intersection of being exposed and being especially vulnerable to climate-related exposures, as indicated in Figure 1.

**Figure 1**

**RISK: THE INTERSECTION OF EXPOSURE AND VULNERABILITY**



Those at a higher degree of risk with greater exposure and vulnerability to the adverse effects of climate change include:

- the elderly,
- the fragile,
- young children and pregnant women,
- the under and malnourished,
- those of lower socioeconomic status,
- the socially isolated or homeless,
- those with less educational attainment,
- those with inadequate access to information and healthcare services,
- those with certain chronic physical or mental health conditions (e.g., suffering from cardiovascular, kidney, diabetes, and respiratory diseases),
- those with limited family and community support,
- those living in poor-quality housing or degraded environment, and
- those who work under unsafe conditions.

They may reside in an especially exposed location (e.g., in a twice-flooded area or buildings in a too-narrow wildlife-urban interface area). Those most exposed or vulnerable may not have the resources to move or may not be willing to start over. In any case, unless forced, convincing anyone, especially a retiree, to relocate can be a tough sell, although a significantly higher cost of insurance or lack of insurance availability can provide a meaningful incentive to move. In addition, evacuation or emigration may lose much of their wealth that may be sunk into their home. In some cases, however, an exposed location could simultaneously be viewed as being highly desirable, such as living on the shore of a river or ocean, or at the edge of a forest.

The relative risk for a specific person can differ by climate hazard, each of which should be assessed separately. In addition, there are also compound (hazards occurring at the same time) or cascading (multiple hazards that are causally related) risks that can be greater than each separately. For example, excess heat and dryness can result in wildfires, while excess heat and high humidity can result in a heat stroke. For many retirees, these risks can be

particularly dangerous when they exacerbate existing health and mortality risks. To obtain a full (holistic) picture of a person's exposure it is helpful to assess both their exposure and vulnerability to each major hazard.

The extent of vulnerability should be recognized, that is, one may not be either vulnerable or not vulnerable – individuals are often exposed to a range of partial vulnerability.

Climate-related hazards can affect individuals differently, as exposure and vulnerability are heterogeneous. Many retirees have benefited from adaptive actions such as upgrading and appropriately maintaining their property and remaining active and healthy, both physically and cognitively. For example, to avoid (or minimize) property loss, some buildings have been built or re-built to a higher building standard; in an area that has been subject to flood risks, it could be built to withstand that hazard. If located in a woodland interface boundary area, it could be built a certain distance from a forest with a heat or fire-resistant roof. Some retirees remain healthy through physical activity or are prepared to avoid or withstand loss or damage.

Although the aggregate percent of those over age 65 who were in poverty was 10.3% in 2019 in the United States compared with a poverty rate for all ages of 12.8%<sup>3</sup>, a concern remains that income for many retirees can be significantly lower than when they were working, with an income that is relatively fixed, except for their Social Security benefits.

Many individuals with low income (or wealth) or who are in an otherwise disadvantaged population segment are often more vulnerable to the effects of climate change than those with higher incomes, as they have relatively higher exposure, greater sensitivity, less adequate insurance coverage, less access to resources such as healthcare services, reduced mobility in times of extreme events, and lower adaptive capacity to withstand the adverse effects of climate and weather variability. In addition, poor retirees usually have a higher percentage of their resources at risk from climate-related hazards.

Accumulated savings, if any, together with a lack of income potential, may lead to insufficient resilience to substantial changes in economic returns of the type that climate change can produce. Preventive action is needed to reduce the number of the elderly who will become vulnerable by building more resilient and sustainable structures, infrastructures, and communities. This action may be needed because retirees may not maintain their homes to the level they might have when working, partly because of fewer years expected to stay in their current homes.

Vulnerability to climate change can differ between those living in urban and rural areas. This may be due to relatively weak infrastructure and insufficient adaptation to respond effectively to climate change risks. Such vulnerability is exacerbated in some urban areas located in areas close to rivers or coasts, exposing people to the adverse effects of hazards such as floods, storms, and landslides.

An example of those who are disproportionately vulnerable is those who are disabled, frail, or cognitively impaired, who may be especially exposed to climate emergencies partly because of their reduced ability to take protective action or react to changed circumstances.

In addition, the extent of and the inability to avoid exposure to one or more ongoing climate hazards and a reduced ability to recover from damage are key determinants of the harm process.

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<sup>3</sup> American Community Survey.

As retirees age, their bodies tend to get frailer and become more sensitive to weather extremes, particularly hot weather. The number of temperature and weather-related illnesses and deaths is bound to climb with an aging population. Among the hardest hit will be those already suffering from multi-morbidities, especially when they include chronic respiratory or cardiovascular conditions. This greater sensitivity increases their health vulnerability. An example is that nearly half the deaths related to Hurricane Katrina in Louisiana in 2005 were of people over age 75.

Note, however, that while there will be an increase in heat-related conditions, there may also be a decrease in cold-related effects. The net effect will differ by geographic location. The migration of retirees toward warmer climates may result in a change in the net effect of these two trends.

In addition, those older than age 65 can be especially affected by poor air quality, wildfires, dust storms, and heavy rainfall, all of which can contribute to increased respiratory risks, both making pre-existing respiratory diseases more severe and initiating respiratory conditions in previously healthy individuals.

Socioeconomically disadvantaged retirees are more likely to live in hotter parts of cities with higher-density residential structures, less effective insulation and air conditioning, and lower quality or older construction materials. Racial, ethnic, and disabled individuals are particularly affected.

Heatwaves are especially deadly for the elderly when temperatures rise suddenly. They might also take medications that result in heat intolerance and impair their body's response to heat, including the ability to thermoregulate. Living in small units or apartments can make it difficult to deal with extreme heat, especially those with minimal ventilation. In some cases, small window sizes or lack of windows that open can contribute to insufficient airflow where an air conditioner may not be easily or affordably installed. In addition, many cannot afford to buy or operate cooling devices or have easy access to public cooling centers; nor can everyone stay at home all day in an air-conditioned space. In the United Kingdom, for example, about 90% of heatwave deaths were among people aged over 65.

The World Health Organization (WHO) (2014)<sup>4</sup> estimated that at a global level for those aged 65 and older, there will be about 38,000 heat stress-related deaths in 2030 (reaching about 95,000 in 2050), with about 4,500 in high-income regions associated with climate change. In the United States, in contrast to an expected 8,500 deaths in a typical year under current baseline climate and demographic conditions, an additional 59,000 deaths per year are expected by 2050 assuming the current level of adaptation, no increase in power outages, and no exceptionally hot years<sup>5</sup>.

Older adults are also more vulnerable than others to waterborne pathogens, due to their inefficient thermoregulatory systems, greater sensitivity to dehydration and gastrointestinal illness, and inadequate immune systems. Older adults may also be slower to seek medical attention.

Older people may also disproportionately suffer from adverse mental conditions, such as a reduced ability to cope with trauma, anxiety, agitation, and depression from conditions such as heatwaves or other extreme conditions, as

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<sup>4</sup> World Health Organization (WHO) (2014). "Quantitative Risk Assessment of the Effects of Climate Change on Selected Causes of Death, 2030s and 2050s." <http://www.who.int/globalchange/publications/quantitative-risk-assessment/en/>.

<sup>5</sup> Atlantic Council (2021). "Extreme Heat, the Economic and Social Consequences for the United States". August 2021. ISBN-13: 978-1-61977-192-5.

well as increased concerns resulting from uncertainty and insecurity over how they will survive such future events. Social isolation, although not restricted to retirees, can contribute to more deaths when living alone.

In addition, evacuations from either sudden or slow-onset events and conditions can pose significant health risks to less mobile and fragile older adults, especially those who are frail, medically incapacitated, cognitively impaired, or residing in nursing facilities. Evacuations may be further complicated by the need to concurrently transfer medical records where not stored digitally offsite, medications, and medical equipment.

## Conclusion

Current and future retirees should be aware of their vulnerability to hazards related to climate change. There is value in living in resilient buildings and locations. However, limited means and aging may reduce the level of their preparedness. The extent and patterns of vulnerability can differ by type of hazard, as will methods used to prepare for and adapt to these hazards. Although many retirees may focus on more short-term concerns than climate-related risks, preparedness is always more effective than loss recoverability.

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