



SOCIAL CONNECTEDNESS
FELLOWSHIP PROGRAM

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Forced to Wait:

How Climate Change Response
Excludes People with Disabilities,
Older People

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EXECUTIVE SUMMARY

Climate change has been caused and exacerbated by human activity, which has dire consequences on, not only the environment, but on the entire human population.¹ As global warming worsens, extreme heat, wildfires, sea level rise, coastal erosion, floods, storms, and hurricanes are becoming more frequent and more severe. The consequences are dire, with thousands of lives at risk with each climate disaster and extreme climate events.

People with disabilities and older people are among those who are most impacted by climate change,² yet the current research on how they are affected is lacking.³ There is a gap in knowledge of how climate change impacts people with disabilities and older people, and by how much. Further, people with disabilities and older people are often excluded from climate change discussions, planning, decision making processes, policy making, and responses.⁴ People with disabilities and older people are not supported before, during, or after climate disasters, and fare worse outcomes as a result.

This has been especially evident in the past 20 years in Alaska and Louisiana in the United States, where coastal erosion and rising sea levels lead to climate displacement, as well as across Europe in the summer of 2022, when extreme heat waves led to the deaths of thousands of people, mostly among older people and people with disabilities.

Governments have failed to ensure the safety and protection of people with disabilities and older people.⁵ Climate change response too often relies on individual responsibility rather than robust frameworks that ensure protection and foster adaptability and resilience. The current climate action framework risks the lives of people with disabilities and older people, who are forced to wait to be rescued instead of given active roles in climate change discussions and planning. Proactive, anticipatory, and inclusive planning and response is vital for the protection of thousands of lives.

¹ Melissa Denchak and Jeff Turrentine, "What is Climate Change?" *Natural Resources Defense Council (NRDC)*, September 1, 2021,

<https://www.nrdc.org/stories/what-climate-change#:~:text=Natural%20causes%20of%20climate%20change,naturally%20occurring%20greenhouse%20gas%20concentrations>.

² Office of the United Nations High Commissioner for Human Rights (OHCHR), "Persons with Disabilities Disproportionately Affected by Climate Change," *OHCHR*, July 24, 2020, <https://www.ohchr.org/en/stories/2020/07/persons-disabilities-disproportionately-affected-climate-change>; Barry S. Levy and Jonathan A. Patz, "Climate Change, Human Rights, and Social Justice," *Annals of Global Health* 81, issue 3 (May-June 2015): 310-322, <https://doi.org/10.1016/j.aogh.2015.08.008>.

³ Maria Kett, Gaya Sriskanthan, and Ellie Cole, "Disability and Climate Justice: A Research Project," *Open Society Foundations*, December 2021, 6, https://www.ucl.ac.uk/epidemiology-health-care/sites/epidemiology_health_care/files/disability_and_climate_justice_research_project_final_to_share.pdf.

⁴ Ibid.

⁵ Sébastien Jodoin, "Status Report on Disability Inclusion in National Climate Commitments and Policies," *McGill Centre for Human Rights and Legal Pluralism, Disability-Inclusive Climate Action Research Programme (DICARP), and International Disability Alliance (IDA)*, June 2022, https://www.internationaldisabilityalliance.org/sites/default/files/drcc_status_report_english_0.pdf.

INTRODUCTION

The impacts of climate change have been, until recently, largely invisible.⁶ In fact, early discussions on climate change were about how to make its impacts more visible so that individuals, organizations, countries, and policymakers could realize the imminent need to keep climate change to a manageable and sustainable level.⁷

Climate events during 2022 have been so extreme, however, that the invisibility of climate change can no longer be claimed. This summer alone, Afghanistan, Australia, Bangladesh, China, India, New Zealand, Nigeria, Pakistan, South Africa, South Korea, Sudan, and the United States saw devastating and deadly floods of a much larger and severe scale than seen previously.⁸ For example, Pakistan's unprecedented floods have affected 33 million people and killed more than 1,000.⁹ Heatwaves across Europe in July 2022 led to thousands of deaths, as 21 countries recorded unusual extreme heat, with several seeing record-shattering temperatures. The United States similarly

⁶ Avi Brisman, "Representing the 'Invisible Crime' of Climate Change in an Age of Post-Truth," *Theoretical Criminology* 22, issue 3 (August 2018): <https://doi.org/10.1177/1362480618787>; Lucy Wood, "Climate Change is Invisible, Insidious and Urgent. Can the Arts Help Us See It?" *The Guardian*, October 28, 2016, <https://www.theguardian.com/science/political-science/2016/oct/28/climate-change-is-invisible-insidious-and-urgent-can-the-arts-help-us-see-it>.

⁷ Ibid.

⁸ Lekshmy Pavithran and Balaram Menon, "Lives Lost, Homes Ravaged from India to South Korea, The Horrific Aftermath of Floods," *Gulf News*, August 24, 2022, <https://gulfnews.com/photos/news/lives-lost-homes-ravaged-from-india-to-south-korea-the-horrific-aftermath-of-floods-1.1661338563841?slide=1>.

⁹ Samuel Osborne, "Pakistan Flooding: Record-Breaking Rains Threaten 4,500-Year-Old Archaeological Site as Lake Close to Overflowing," *Sky News*, September 6, 2022, <https://news.sky.com/story/pakistan-flooding-record-breaking-rains-threaten-4-500-year-old-archaeological-site-as-lake-close-to-overflowing-12691231>.

faced an unusually hot summer this year,¹⁰ as did China¹¹ and countries in northern Africa.¹² This summer has seen such extreme weather events that experts have called this year a “wake-up call” on the impacts of climate change and the need for urgent and sufficient climate action.¹³

The Intergovernmental Panel for Climate Change (IPCC), one of the leaders in producing climate change knowledge, defines climate change as “a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity.”¹⁴ Other entities, such as the United Nations Framework Convention on Climate Change (UNFCCC), have a more nuanced definition of climate change, regarding it as “a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable

¹⁰ Anna Phillips et al., “Summer in America is Becoming Hotter; Longer and More Dangerous,” *The Washington Post*, July 2, 2022, <https://www.washingtonpost.com/climate-environment/2022/07/02/summer-2022-climate-change-heat/>.

¹¹ Verna Yu, “China Reports ‘Most Severe’ Heatwave and Third Driest Summer on Record,” *The Guardian*, September 7, 2022, <https://www.theguardian.com/world/2022/sep/07/china-reports-most-severe-heatwave-and-lowest-rainfall-on-record>.

¹² Michael Le Page, “Why Have We Seen So Many Heatwaves Around the World in 2022?” *New Scientist*, September 8, 2022, <https://www.newscientist.com/article/2336829-why-have-we-seen-so-many-heatwaves-around-the-world-in-2022/>.

¹³ New Scientist Environment, “The Recent Heatwave Should Act as a Wake-Up Call About Climate Action,” *New Scientist*, July 20, 2022, <https://www.newscientist.com/article/2329868-the-recent-heatwave-should-act-as-a-wake-up-call-about-climate-action/>.

¹⁴ United Nations Framework Convention on Climate Change (UNFCCC), “Fact Sheet: Climate Change Science - The Status of Climate Change Science Today,” UNFCCC, February 2011, 1, https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_science.pdf.

time periods.”¹⁵ This report will use IPCC’s definition of climate change, which includes changes that are both natural and human-induced. This is for the purpose of policy recommendations, which should delineate where human intervention can and should take place.

People with disabilities and older people are disproportionately impacted by climate change. Numerous studies, book chapters, and journal articles identify people with disabilities and older people as populations among the most vulnerable to the impacts of climate change,¹⁶ not to mention reports published by the United Nations Human Rights Council that outline how both populations are adversely affected by climate change.¹⁷ Despite such overwhelming

¹⁵ Ibid 2.

¹⁶ Janet L. Gamble et al., “Climate Change and Older Americans: State of the Science,” *Environmental Health Perspectives* 121, no. 1 (January 2013): 15-22, <https://ehp.niehs.nih.gov/doi/epdf/10.1289/ehp.1205223>; Molly M. King and Maria A. Gregg, “Disability and Climate Change: A Critical Realist Model of Climate Justice,” *Sociology Compass* 16, issue 1 (December 2021): e12954, <https://doi.org/10.1111/soc4.12954>; Aleksandra Kosanic, Jan Petzold, Berta Martín-López, and Mialy Razanajatovo, “An Inclusive Future: Disabled Populations in the Context of Climate and Environmental Change,” *Current Opinion in Environmental Sustainability* 55 (April 2022): 101159, <https://doi.org/10.1016/j.cosust.2022.101159>; Barry S. Levy and Jonathan A. Patz, “Climate Change, Human Rights, and Social Justice,” *Annals of Global Health* 81, issue 3 (May-June 2015): 310-322.; Marcie Roth, “A Resilient Community is One that Includes and Protects Everyone,” *Bulletin of the Atomic Scientists* 74, issue 2 (February 2018): 91-94, <https://doi.org/10.1080/00963402.2018.1436808>; Richa Sharma and R. Srikanth, “The Consequences of Climate Change on Vulnerable Populations,” in *Climate Change and the Health Sector*, ed. Alexander Thomas, K. Srinath Reddy, Divya Alexander, and Poornima Prabhakaran (London: Routledge India, 2021), 98-105, <https://doi.org/10.4324/9781003190516-13>; Penelope J.S. Stein and Michael Ashley Stein, “Climate Change and the Right to Health of People with Disabilities,” *The Lancet: Global Health* 10, issue 1 (December 2021): E24-E25, [https://doi.org/10.1016/S2214-109X\(21\)00542-8](https://doi.org/10.1016/S2214-109X(21)00542-8); Gregor Wolbring, “A Culture of Neglect: Climate Discourse and Disabled People,” *A Journal of Media and Culture* 12, no. 4 (October 2009): <http://dx.doi.org/10.11575/PRISM/33811>; Beverly Wright and Earthea Nance, “Toward Equity: Prioritizing Vulnerable Communities in Climate Change,” *Duke Forum for Law & Social Change* 4, no. 1 (2012): 1-21, <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1024&context=dfisc>.

¹⁷ United Nations (UN) Human Rights Council General Assembly, “Analytical Study on the Promotion and Protection of the Rights of Persons with Disabilities in the Context of Climate Change: Report of the Office of the United Nations High Commissioner for Human Rights,” *Office of the United Nations High Commissioner for Human Rights (UN OHCHR)*, June-July 2020, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G20/097/56/PDF/G2009756.pdf?OpenElement>; UN Human Rights Council General Assembly, “The Impacts of Climate Change on the Human Rights of People in Vulnerable Situations: Report of the Secretary-General,” *UN OHCHR*,

agreement on the disproportionate impacts, however, people with disabilities and older people are still being left out of climate change discourse and knowledge production. Consequently, while the unequal impact of climate change on these communities is well-established, not much is known on why and how exactly they are disproportionately impacted. The Office of the United Nations High Commissioner for Human Rights (OHCHR) attributes the unequal impacts on people with disabilities to poverty, since most people with disabilities live in poverty, and those who live in poverty are more vulnerable to the effects of climate change.¹⁸ Still, “there’s very little research on the topic,” according to Aleksandra Kosanic.¹⁹

People with disabilities are also excluded from climate change decision making processes and responses.²⁰ For example, the 2021 United Nations Climate Change Conference (COP26), one of the key climate change events where discussions and decision making on climate change take place, was not accessible to many people with disabilities. Additionally, people with disabilities were rarely mentioned, even though they are among those most affected by

June-July 2022, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G22/336/00/PDF/G2233600.pdf?OpenElement>; UN Human Rights Council General Assembly, “Analytical Study on the Promotion and Protection of the Rights of Older Persons in the Context of Climate Change: Report of the Office of the United Nations High Commissioner for Human Rights,” *UN OHCHR*, June-July 2021, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G21/099/23/PDF/G2109923.pdf?OpenElement>.

¹⁸ OHCHR, “Persons with Disabilities Disproportionately Affected by Climate Change,” *OHCHR*, July 24, 2020; UN General Assembly, *Convention on the Rights of Persons with Disabilities*, UN General Assembly Resolution A/RES/61/106, December 13, 2006, under Preamble.

¹⁹ UN Environment Programme, “How Climate Change Disproportionately Impacts Those with Disabilities,” *UN Environment Programme*, December 9, 2019, <https://www.unep.org/news-and-stories/story/how-climate-change-disproportionately-impacts-those-with-disabilities>.

²⁰ OHCHR, “Persons with Disabilities Disproportionately Affected by Climate Change,” *OHCHR*, July 24, 2020.

climate change.²¹ According to Leanne McNulty, people with disabilities are “woefully underrepresented” in climate justice.²²

To better understand the impacts of climate change on people with disabilities and older people, this report outlines how these populations have been impacted in Alaska and Louisiana in the United States, where human-induced climate change is causing severe coastal erosion and sinking of land that is forcing entire communities to be displaced, as well as across Europe, where record, unprecedented heatwaves and wildfires in July 2022 led to the deaths of thousands of people. With each of these locations, this report will describe how climate change has been exacerbated by human activity; consider how people with disabilities and older people specifically are impacted; give a brief overview of government responses, laws, and policies; and give a set of recommendations to mitigate the adverse impacts of climate change on people with disabilities and older people. Finally, this report discusses its wider impact on climate change discourse and identifies further areas of research that should be pursued.

ISSUE, EVIDENCE AND KEY FINDINGS

1. Climate Displacement in Alaska and Louisiana

In both Alaska and Louisiana, climate change is causing coastal erosion and rising sea levels, resulting in the sinking of land, also known as

²¹ Maria Kett, Gaya Sriskanthan, and Ellie Cole, “Disability and Climate Justice: A Research Project,” *Open Society Foundations*, December 2021, 4.

²² Leanne McNulty, “Disability Rights is a Climate Justice Issue. Here’s Why,” *Green is the New Black*, January 25, 2022, <https://greenisthenewblack.com/disability-rights-is-a-climate-justice-issue-heres-why/>.

“subsidence.”²³ In both locations, Indigenous communities are being impacted the most.²⁴ Indigenous communities already have worse mental health than non-Indigenous populations,²⁵ which can be further exacerbated by natural disasters that result in displacement of communities.²⁶

In media coverage of climate displacement in both Alaska and Louisiana, the label “climate refugee” is often used to describe communities in danger of disappearing due to climate change.²⁷ The definition of a refugee is “someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion.”²⁸ By this definition established in the 1951 Refugee Convention, displaced populations in Alaska and Louisiana are not technically refugees, but rather, “persons displaced in the

²³ Environmental Defense Fund (EDF), “How will Climate Change Affect Alaska?” *EDF*, Accessed June 27, 2022, https://www.edf.org/sites/default/files/content/regional_releases_alaska_web_version.pdf; United States Environmental Protection Agency (US EPA), “What Climate Change Means for Louisiana,” *US EPA*, August 2016, <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-la.pdf>.

²⁴ Kathryn Norton-Smith et al., “Climate Change and Indigenous Peoples: A Synthesis of Current Impacts and Experiences,” *United States Department of Agriculture (USDA), Forest Service, Pacific Northwest Research Station*, 136 (2016): <https://doi.org/10.2737/PNW-GTR-944>.

²⁵ *Ibid.*

²⁶ Sarah Yoder, “Assessment of the Potential Health Impacts of Climate Change in Alaska,” *State of Alaska Epidemiology*, January 8, 2018, https://www.commerce.alaska.gov/web/Portals/4/pub/Potential_Health_Impacts_ClimateChange1.2018.pdf.

²⁷ Victoria Herrmann, “America’s First Climate Change Refugees: Victimization, Distancing, and Disempowerment in Journalistic Storytelling,” *Energy Research & Social Science*, no. 31 (September 2017): 205-214, <https://doi.org/10.1016/j.erss.2017.05.033>; Bob Marshall, “The People of Isle de Jean Charles Aren’t the Country’s First Climate Refugees,” *The Lens*, December 6, 2016.; Michael Bastasch, “Media Outlets Discover ‘America’s First Climate Refugees’ - for the 3rd Time in 3 Years,” *Daily Caller News Foundation*, May 3, 2016, <https://dailycaller.com/2016/05/03/media-outlets-discover-americas-first-climate-refugees-for-the-3rd-time-3-years/>.

²⁸ United Nations High Commissioner for Refugees (UNHCR), “What is a Refugee?”, *UNHCR*, Accessed 23 August 2022, <https://www.unhcr.org/what-is-a-refugee.html#:~:text=The%201951%20Refugee%20Convention%20is.group%2C%20or%20political%20opinion.%E2%80%9D>.

context of disasters and climate change,” as defined by the United Nations High Commissioner for Refugees (UNHCR).²⁹ Still, popular news outlets like The New York Times, The Times, The Guardian, The Atlantic, and the British Broadcasting Corporation (BBC) have all called displaced populations as “climate refugees.”³⁰

Federal plans and policies in the United States lack in addressing climate change impacts on people with disabilities and older people. The United States signed the Paris Agreement in 2016, which is “a legally binding international treaty on climate change” with the goal of mitigating global warming by reducing greenhouse gas emissions.³¹ As part of the agreement, countries are required to draw up climate action plans, called nationally determined contributions (NDCs).³² NDCs must consider people with disabilities in national climate commitments and policies, but the United States’ NDC fails to include people with disabilities.³³ According to Sébastien Jodoin, professor at McGill University, people with disabilities are being “systematically ignored.”³⁴

²⁹ UNHCR, “Climate Change and Disaster Displacement,” *UNHCR*, Accessed 23 August 2022, <https://www.unhcr.org/climate-change-and-disasters.html>.

³⁰ Michael Bastasch, “Media Outlets Discover ‘America’s First Climate Refugees’ - for the 3rd Time in 3 Years,” *Daily Caller News Foundation*, May 3, 2016.

³¹ United Nations Framework Convention on Climate Change (UNFCCC), “The Paris Agreement,” *UNFCCC*, Accessed 23 August 2022, <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

³² Sébastien Jodoin, “Status Report on Disability Inclusion in National Climate Commitments and Policies,” *McGill Centre for Human Rights and Legal Pluralism, Disability-Inclusive Climate Action Research Programme (DICARP), and International Disability Alliance (IDA)*, June 2022.

³³ *Ibid.*

³⁴ Fiona Harvey, “Disabled Being ‘Ignored’ on Climate Crisis: Study,” *The ASEAN Post*, June 11, 2022, <https://theaseanpost.com/environment/2022/jun/11/disabled-being-ignored-climate-crisis-study>.

1.1 Alaska

1.1.1 Climate Change

Alaska is warming twice as fast as the rest of the United States.³⁵ Due to global warming, Alaska has warmer temperatures, earlier spring snowmelt, later ice formation, glacier retreat, permafrost thawing, increase in sinkholes, flooding, drier landscapes, extreme wildfires, coastal erosion, and subsidence.³⁶ These all cause the sea level to rise, which threatens the viability of coastal villages as land is subsumed into the sea at alarming rates.³⁷

Alaska Native communities are the most impacted by climate change, even though these communities contribute the least amount of greenhouse gases, and as former Interior Department Official Deborah Williams states, “the least equipped to address the consequences of global warming are the first people victimized.”³⁸ For Alaska Native communities, the impacts of climate change are not just environmental and financial, but concerns also include being able to maintain their culture and deep ties to the land.³⁹

³⁵ Kathleen D. White and Jeffrey R. Arnold, “Recent US Climate Change and Hydrology Literature Applicable to US Army Corps of Engineers Missions: Alaska Region,” *United States Army Corps of Engineers (USACE) Climate Preparedness and Rescue* (September 2015): 9, <https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/6745/>.

³⁶ Environmental Defense Fund (EDF), “How will Climate Change Affect Alaska?” *EDF*, Accessed June 27, 2022.

³⁷ Alaska News, “Al Jazeera Documentary Tells Tale of Two Eroding Alaska Villages,” *Anchorage Daily News*, December 18, 2015, <https://www.adn.com/environment/article/eroding-villages-subject-al-jazeera-documentary/2015/12/18/>; Lisa Demer, “The Creep of Climate Change,” *Anchorage Daily News*, August 28, 2015, <https://www.adn.com/features/alaska-news/rural-alaska/2016/11/29/the-creep-of-climate-change/>.

³⁸ Elizabeth Arnold, “Tale of Two Alaskan Villages,” *National Public Radio (NPR)*, July 29, 2008, <https://www.npr.org/templates/story/story.php?storyId=93029431&t=1656366236953>.

³⁹ *Ibid.*; PBS NewsHour, “As Water Levels Rise, This Alaska Town is Fleeing to Higher Ground,” PBS NewsHour, November 28, 2019, YouTube video, 7:38, <https://www.youtube.com/watch?v=2vMZsgfQrw8>.

87% of all Alaska Native communities are experiencing some sort of flooding or erosion across 180 communities.⁴⁰ A 2009 U.S. Army Corps of Engineers report showed that erosion threatens the viability of 26 Alaska villages, with four in “imminent danger,” with plans to relocate.⁴¹ Alaska Native individuals are more likely to live in areas that are most at risk of disappearing in the next decades due to sea level rise and subsidence, and because they reside in these precarious areas, they also face increased mortality due to climate-related issues.⁴² Simply put, people will die if villages do not relocate.⁴³

⁴⁰ State of Alaska, “Coastal Flooding & Erosion in Alaska: Alaska Division of Geological & Geophysical Surveys,” *State of Alaska*, Accessed June 27, 2022, <https://www.commerce.alaska.gov/web/Portals/4/pub/RA/Coastal%20Flooding%20and%20Erosion%20in%20AK.pdf>; Suzanne Goldenberg, “America’s First Climate Refugees,” *The Guardian*, May 13, 2013, <https://www.theguardian.com/environment/interactive/2013/may/13/newtok-alaska-climate-change-refugees>.

⁴¹ Lisa Demer. “The Creep of Climate Change.” *Anchorage Daily News*, August 28, 2015.; USACE, “Alaska Baseline Erosion Assessment: Study Findings and Technical Report,” *USACE: Alaska District*, March 2009, https://web.archive.org/web/20170911200034/http://climatechange.alaska.gov/docs/iaw_USACE_erosion_rpt.pdf; US Government Accountability Office (GAO), “Alaska Native Villages: Most are Affected by Flooding and Erosion, but Few Qualify for Federal Assistance,” GAO, December 12, 2003, <https://www.gao.gov/products/gao-04-142>.

⁴² US EPA, “Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts,” *EPA*, September 2021, https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.

⁴³ Suzanne Goldenberg, “America’s First Climate Refugees,” *The Guardian*, May 13, 2013.

1.1.2 Impacts on People with Disabilities and Older People



Figure 1. An older man in Kivalina, Alaska looks out into the horizon⁴⁴

Those in threat of climate displacement live in rural, coastal areas of Alaska.⁴⁵ The mental health of rural Alaskans is proven to be more fragile than the health of those living in non-rural areas.⁴⁶ Rural Alaska has the highest rate of suicide per capita in the United States and has high rates of alcohol-related deaths and suicides.⁴⁷ Climate change impacts exacerbate already existing poor mental health, as people are living in fear of one day losing their homes and

⁴⁴ Joe Raedle, "Jerry Norton Dresses Warmly on a Cool Morning in Kivalina, on September 14, 2019," photograph, *The Atlantic*, September 18, 2019, https://www.theatlantic.com/photo/2019/09/photos-impacts-climate-change-kivalina-alaska/598282/?gclid=Cj0KCQjwxNT8BRD9ARIsAJ8S5xYHN6r6Juz2_4ERq08tnNo7xVsmt-BDvtl2Z7p9iuRF7DMFWUoZiWUaAvAIEALw_wcB.

⁴⁵ *After the Ice*, episode 2, "Our Land," directed by Eli Kintisch, aired October 15, 2020 on PBS Terra, <https://www.pbs.org/video/our-land-01nv3e/>.

⁴⁶ Ibid.

⁴⁷ Ibid.

possibly their lives due to climate change.⁴⁸ In fact, the State of Alaska published an assessment of potential health impacts of climate change in Alaska in January 2018, in which the mental health implications are specifically indicated.⁴⁹ As a result of climate events, Alaskans may develop post-traumatic stress disorder (PTSD)⁵⁰ that can result in a psychosocial disability. Similarly, the United States Department of Agriculture and the United States Forest Service jointly published a report in October 2016 that lists the mental health impacts of climate change.⁵¹

The case of climate displacement in Alaska is especially interesting considering the role of older people in the community.⁵² In Native Alaska culture, “elders⁵³,” are greatly respected and seen as bearers of knowledge, culture, tradition, and insight.⁵⁴ Starting in 2021, Alaskan Native elders and older people started to play a more prominent role in climate change discussions.⁵⁵ Since records of weather events and climate change have not been recorded extensively until the 1940s—and even then, records may not reflect the entire year but only summer months—the gap in scientific knowledge on the changes in the climate is sourced from elders, because the native lifestyle that relies on

⁴⁸ Suzanne Goldenberg, “America’s First Climate Refugees,” *The Guardian*, May 13, 2013.

⁴⁹ Sarah Yoder, “Assessment of the Potential Health Impacts of Climate Change in Alaska,” *State of Alaska Epidemiology*, January 8, 2018.

⁵⁰ *Ibid.*

⁵¹ Kathryn Norton-Smith et al., “Climate Change and Indigenous Peoples: A Synthesis of Current Impacts and Experiences,” *United States Department of Agriculture (USDA), Forest Service, Pacific Northwest Research Station*, 136 (2016).

⁵² *After the Ice*, episode 3, “Our Story,” directed by Eli Kintisch, aired October 15, 2020 on PBS Terra, <https://www.pbs.org/video/our-story-a5nva0/>.

⁵³ It is important to note that not all older Native Alaskan’s are necessarily considered Elders by the community. Elder is a term given with reverence and has distinct cultural meaning.

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

hunting and fishing requires detailed and intimate knowledge of weather patterns.⁵⁶

Elders' knowledge, expertise, and personal histories are being relied on by the scientific community to better understand how the land and sea are changing, and how climate change is affecting both animals and their habitats, and the lifestyle of Indigenous Alaskans.⁵⁷ Recognizing the unique and complete knowledge of Native elders, the National Oceanic and Atmospheric Administration's (NOAA) annual "Arctic Report Card" (ARC), which publishes information on the status of the Arctic, included a chapter on the Indigenous perspective for the first time in 2021, with many of these perspectives coming from the elders.⁵⁸ Indigenous older people are increasingly included as decision makers in combating and adapting to changes brought on by climate change. One way of doing this is applying Indigenous ways of adaptation into climate action policies and plans.

Older people are also the ones who are most impacted by relocation, as their lives, communities, homes, and identities are closely tied to regions now threatened by climate change.⁵⁹ As one elder commented in the PBS documentary, *After the Ice*, "As we're losing our age, our old way of life literally melting away, our identity is being lost. But we're still here. We're still who we are."⁶⁰

⁵⁶ Ibid.; Environmental Defense Fund (EDF). "How will Climate Change Affect Alaska?" *EDF*, Accessed June 27, 2022.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ *After the Ice*, episode 2, "Our Land," directed by Eli Kintisch, aired October 15, 2020 on PBS Terra.

⁶⁰ *After the Ice*, episode 3, "Our Story," directed by Eli Kintisch, aired October 15, 2020 on PBS Terra.

1.1.3 Laws, Policies, and Government Response

Despite the extensive evidence of the detrimental impact of climate change on Alaskan populations, Native Alaskans are excluded from adaptation measures that mitigate the impacts of climate change, according to the U.S. Environmental Protection Agency (EPA).⁶¹ The U.S. Government Accountability's Office (GAO) published a report that shows that few Native Alaskan communities are able to receive federal assistance.⁶² The administration of Former President Barack Obama stated an insufficiency in funds to help communities most affected by climate change.⁶³ In 2005, the U.S. Corps of Engineers used federal funds to build rock revetments to protect two Alaskan villages, Kivalina and Shishmaref, but in 2009 the law was rescinded, and the villages had to secure their own funds to complete the project instead.⁶⁴

State response to Alaska's coastal erosion has been oscillating between addressing climate change and ignoring it. Former Alaskan Governor Sarah Palin had established a climate change subcabinet in 2007 that drew up legislature sanctioning more than \$12 million to help protect native Alaskan villages from erosion and other climate risks, and to help relocate communities in danger.⁶⁵ However, her successor, Former Governor Sean Parnell, retired the subcabinet

⁶¹ US EPA, "Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts," *EPA*, September 2021.

⁶² US Government Accountability Office (GAO), "Alaska Native Villages: Most are Affected by Flooding and Erosion, but Few Qualify for Federal Assistance," GAO, December 12, 2003.

⁶³ Suzanne Goldenberg, "America's First Climate Refugees," *The Guardian*, May 13, 2013.

⁶⁴ Erica Goode, "A Wrenching Choice for Alaska Towns in Path of Climate Change," *The New York Times*, November 29, 2016, <https://www.nytimes.com/interactive/2016/11/29/science/alaska-global-warming.html>.

⁶⁵ Suzanne Goldenberg, "An Undeniable Truth?: From Palin to Parnell, Alaska's Politicians Have Struggled to Reconcile Policy with Actuality," *The Guardian*, May 14, 2013, <https://www.theguardian.com/environment/interactive/2013/may/14/alaska-politics-climate-change-sarah-palin>.

upon his induction in July 2009 and focused on using state funds to repair damage caused by climate change, such as damage to roads, buildings, and other infrastructure.⁶⁶ Former Governor Bill Walker succeeded Parnell in 2014, and in October of 2017, Walker appointed a Climate Action Leadership Team, which drafted documents for state-level policy that included plans to reduce greenhouse gas emissions by 30% by 2025, switch to renewable electric sources, and use carbon pricing.⁶⁷ Walker supported the relocation of threatened Alaskan villages, stating that relocation is essential to maintaining traditional culture.⁶⁸

Current Governor Mike Dunleavy formally disbanded the task force that Walker established on the basis that “for various reasons these AO’s [Area of Operations] are no longer needed: they are no longer relevant, have fulfilled their intended purpose, are not aligned with the Governor’s policy direction, and/or appear to have been made primarily for political or public relations purposes.”⁶⁹ Governor Dunleavy has received criticism for his support of the oil industry,⁷⁰ and his statement that the warming of the Arctic could be beneficial for Alaska, since the melting of ice can create further business opportunities and increase the

⁶⁶ Ibid.

⁶⁷ The Associated Press (AP), “Alaska Officials Complete State-Level Climate Policy Draft,” *The Seattle Times*, May 20, 2018, <https://www.seattletimes.com/nation-world/alaska-officials-complete-state-level-climate-policy-draft/>.

⁶⁸ Lisa Demer. “The Creep of Climate Change.” *Anchorage Daily News*, August 28, 2015. <https://www.adn.com/features/alaska-news/rural-alaska/2016/11/29/the-creep-of-climate-change/>.

⁶⁹ Yereth Rosen, “Alaska’s New Governor has Dismissed the State’s Climate Team and Scrapped its Climate Policy and Plan,” *Arctic Today*, February 26, 2019, <https://www.arctictoday.com/alaskas-new-governor-has-dismissed-the-states-climate-team-and-scrapped-climate-policy-and-plan/>.

⁷⁰ Ibid.

potential for oil drilling.⁷¹ Instead of curbing carbon emissions, Governor Dunleavy's plan is to develop technology that removes carbon dioxide from the air,⁷² though he also promotes the development of renewable energy as well as gas.⁷³

At the end of 2019, there was a House Resolution to establish a House Special Committee on Climate Change, which would have been the first legislative committee to address climate change in Alaska, but this was rejected.⁷⁴ Instead of federal or state plans, there exist local policies and plans.⁷⁵ Some local municipalities, such as Anchorage, have adopted a climate action plan to reduce carbon emissions in lieu of a federal or state plan.⁷⁶

Because of the severity of climate change impacts on Alaskan populations, as well as the instability of Alaska's state response to climate change, there have been multiple lawsuits regarding climate actions. In 2008, the Alaskan village of Kivalina sued oil companies for knowingly causing global warming.⁷⁷ Kivalina is predicted to be underwater by 2025,⁷⁸ and despite plans to relocate as far back as 1992,⁷⁹ the village is still identifying a new site for

⁷¹ Ben Hohenstatt, "Gov Says Warming Arctic Could be Good for Alaska," *Juneau Empire*, September 13, 2019,

<https://www.juneauempire.com/news/gov-says-warming-arctic-could-be-good-for-alaska/>

⁷² Ibid.

⁷³ Associated Press (AP) News, "Pro-Oil Alaska Governor Also Backs Renewable Energy Ideas," *AP News*, September 23, 2020,

<https://apnews.com/article/climate-climate-change-anchorage-alaska-archive-0516a343c522ec1b1912a4f1c119ae37>.

⁷⁴ Naqiya Motiwalla, "Local Climate Action Persists in Alaska," *Climate Xchange*, March 27, 2020, <https://climate-xchange.org/2020/03/27/local-climate-action-persists-in-alaska/>.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Elizabeth Arnold, "Tale of Two Alaskan Villages," *National Public Radio (NPR)*, July 29, 2008.

⁷⁸ Adam Wernick and Annie Minoff, "Will These Alaska Villagers be America's First Climate Change Refugees?" *The World*, August 9, 2015, <https://theworld.org/stories/2015-08-09/will-residents-kivalina-alaska-be-first-climate-change-refugees-us>.

⁷⁹ Ibid.

relocation due to the lack of funding.⁸⁰ Kivalina's lawsuit was dismissed by the Supreme Court in 2013.⁸¹

Because of the inaction of the state to address climate change, some have filed lawsuits against the State of Alaska. In 2014, a petition called for the state to reduce carbon emissions by at least 85% below 1990 levels by 2050, but the Alaska Supreme Court dismissed the petition.⁸² In 2019, 16 young plaintiffs filed a lawsuit, claiming that state law promotes the development of Alaska's fossil fuels, which helps cause climate change, negatively impacts subsistence hunting and fishing, leads to erosion, and causes more severe wildfires in Alaska.⁸³ The Alaska Supreme Court dismissed the challenge in January 2022, stating that the development of Alaska's nonrenewable resources has the most benefit to Alaskans.⁸⁴

⁸⁰ Lisa Demer. "The Creep of Climate Change." *Anchorage Daily News*, August 28, 2015.

⁸¹ Adam Wernick and Annie Minoff, "Will These Alaska Villagers be America's First Climate Change Refugees?" *The World*, August 9, 2015.

⁸² Sean Maguire, "In Split Decision, Alaska Supreme Court Dismisses Climate Change Case," *Alaska's News Source*, January 29, 2022, <https://www.alaskasnewsresource.com/2022/01/29/split-decision-alaska-supreme-court-dismisses-climate-change-case/>.

⁸³ Ibid.

⁸⁴ Ibid.

1.1.4 Case Study: Newtok



Figure 2. An older woman walks through a flooded road due to subsidence in Newtok, Alaska.⁸⁵

Newtok is a small village on the west coast of Alaska in the Bethel Census Area. The original 350 residents of Newtok are primarily part of the Yup'ik Indigenous people.⁸⁶ Some of the climate issues Newtok residents are faced with are changing snow timings, permafrost melt that leaves the land surface unstable, thinning and receding sea ice, tundra wildfires, and land loss.⁸⁷ Newtok also has a severe erosion problem that endangers the lives of its residents.⁸⁸ Approximately 83 feet of land is lost to the Ningliq River each year, and many

⁸⁵ Katie Orlinsky, "Monica Kasayuli Walks Across a Flooded Walkway on Her Way Home in Newtok, Alaska. May 26th, 2019," photograph, May 26, 2019, *Prime Collective*, <https://www.primecollective.com/newtok>.

⁸⁶ Suzanne Goldenberg, "America's First Climate Refugees," *The Guardian*, May 13, 2013.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

homes have already been lost to erosion.⁸⁹ Still standing buildings are now on stilts or tilted at “crazy angles.”⁹⁰ Erosion is so severe that the U.S. Army Corps of Engineers predicted that all of Newtok would be underwater by 2017, and protecting the village to stop erosion would not be possible.⁹¹ Newtok held its first public meeting to plan their relocation in 2003, with the cost of the move from Newtok to a new settlement estimated to be as high as \$130 million.⁹²

Mertarvik is the new settlement for Newtok residents, located nine miles away from Newtok.⁹³ There have been delays due to funding issues, mismanagement of grants, government bureaucracy, and shipping and medical delays due to COVID-19.⁹⁴ Some funding for the relocation came from the state as well as from federal bonds and grants, but these funds were inconsistent and insufficient. After COVID-19, Newtok was able to allocate Coronavirus Aid, Relief, and Economic Security Act (CARES Act) funding to build nine additional homes.⁹⁵ Due to these delays, only half of Newtok has relocated to Mertarvik despite relocation plans starting 20 years ago.⁹⁶

⁸⁹ Ibid.

⁹⁰ Lisa Demer. “The Creep of Climate Change.” *Anchorage Daily News*, August 28, 2015.

⁹¹ Suzanne Goldenberg, “America’s First Climate Refugees,” *The Guardian*, May 13, 2013.

⁹² Lisa Demer. “The Creep of Climate Change.” *Anchorage Daily News*, August 28, 2015.

⁹³ Suzanne Goldenberg, “America’s First Climate Refugees,” *The Guardian*, May 13, 2013.

⁹⁴ Ibid.; Julia Ilhardt, “‘It was Sad Having to Leave’: Climate Crisis Splits Alaskan Town in Half,” *The Guardian*, June 8, 2021,

<https://www.theguardian.com/environment/2021/jun/08/it-was-sad-having-to-leave-climate-crisis-splits-alaskan-town-in-half>.

⁹⁵ Julia Ilhardt, “‘It was Sad Having to Leave’: Climate Crisis Splits Alaskan Town in Half,” *The Guardian*, June 8, 2021.

⁹⁶ Ibid; Johanna Eurich, “Newtok is on the Move,” *KYUK*, December 27, 2018, <https://www.kyuk.org/environment/2018-12-27/newtok-is-on-the-move>.

In 2013, three houses were finished in Mertarvik so some Newtok residents decided to relocate.⁹⁷ Due to extreme isolation, however, those who moved still went back to Newtok in the winter.⁹⁸ In 2015, six homes were finished.⁹⁹ Eight houses were built in 2017 and thirteen in 2018.¹⁰⁰ The first families relocated fully to Mertarvik in 2019.¹⁰¹ The community is still split between Newtok and Mertarvik.¹⁰² The families closest to the erosion and flooding were moved first, and others have to wait before they can also relocate.¹⁰³ Those who have moved have been reported to live a healthier and more traditional Yup'ik lifestyle, due to better air quality, healthier diets, and better access to subsistence activities like fishing.¹⁰⁴

However, there were also significant health risks for those in Mertarvik, reported in 2020.¹⁰⁵ Mertarvik is not yet a village, so there is no clinic, no postal service, no running water, no roads, no school, no airport, and electricity comes

⁹⁷ Suzanne Goldenberg, "One's Family's Great Escape," *The Guardian*, May 13, 2013, <https://www.theguardian.com/environment/interactive/2013/may/13/alaskan-family-newtok-mertarvik>.

⁹⁸ Ibid.

⁹⁹ Lisa Demer. "The Creep of Climate Change." *Anchorage Daily News*, August 28, 2015.

¹⁰⁰ Johanna Eurich, "Newtok is on the Move," *KYUK*, December 27, 2018.

¹⁰¹ Greg Kim, "Mertarvik to Get Airport by 2022," *KTOO*, April 10, 2021, <https://www.ktoo.org/2021/04/10/mertarvik-to-get-airport-by-2022/>.

¹⁰² Greg Kim, "LKSD Begins Design of New School in Mertarvik, Which will Replace Temporary Classrooms in Evacuation Center," *KYUK*, February 3, 2022, <https://www.kyuk.org/education/2022-02-03/lksd-begins-design-of-new-school-in-mertarvik-which-will-replace-temporary-classrooms-in-evacuation-center>.

¹⁰³ Greg Kim, "After 20 Year Wait, Newtok Residents Leave Home to Pioneer Mertarvik," *KYUK*, October 22, 2019, <https://www.kyuk.org/environment/2019-10-22/after-20-year-wait-newtok-residents-leave-home-to-pioneer-mertarvik>.

¹⁰⁴ Greg Kim, "After Moving to New Village, Mertarvik Residents Say They are Healthier," *KYUK*, July 27, 2020, <https://www.kyuk.org/health/2020-07-27/after-moving-to-new-village-mertarvik-residents-say-they-are-healthier>.

¹⁰⁵ Greg Kim, "Mertarvik's Lack of a Commercial Airport May Have Already Cost Lives," *KYUK*, July 28, 2020, <https://www.kyuk.org/health/2020-07-28/mertarviks-lack-of-a-commercial-airport-may-have-already-cost-lives>.

from private generators.¹⁰⁶ With no airport in Mertarvik, there is an increased risk for people who need medical help, who have to travel 9.5 miles across the Ninglick River to Newtok, where a medevac plane can land.¹⁰⁷ One person has already died as a result of not being able to access medical treatment in time.¹⁰⁸ The Alaska Department of Transportation has stated that it can only fund one airport between Newtok and Mertarvik, even though both villages have over 100 residents.¹⁰⁹ A plan to build an airport in Mertarvik is set for the end of 2022, having secured funding in 2021.¹¹⁰ Children in Mertarvik had to be home-schooled at first, and once enough children relocated to Mertarvik, a temporary school was set up at the Mertarvik Evacuation Center.¹¹¹ As of February 2022, plans are in place to build a new school, but funds have not yet been secured to do so.¹¹² The goal is to relocate everyone by 2023 and build a new school and health clinic in Mertarvik.¹¹³

Because government agencies do not invest in eroding villages that people are planning on leaving, Newtok does not receive help to keep the community and residences safe.¹¹⁴ While Newtok residents are called the “first climate refugees” in the United States, the residents view themselves as resilient and say those who move to the new site, Mertarvik, are “pioneers.”¹¹⁵

¹⁰⁶ Lisa Demer. “The Creep of Climate Change.” *Anchorage Daily News*, August 28, 2015.

¹⁰⁷ Greg Kim, “Mertarvik’s Lack of a Commercial Airport May Have Already Cost Lives,” *KYUK*, July 28, 2020.

¹⁰⁸ *Ibid.*

¹⁰⁹ *Ibid.*

¹¹⁰ *Ibid.*

¹¹¹ Lisa Demer. “The Creep of Climate Change.” *Anchorage Daily News*, August 28, 2015.

¹¹² Greg Kim, “LKSD Begins Design of New School in Mertarvik, Which will Replace Temporary Classrooms in Evacuation Center,” *KYUK*, February 3, 2022.

¹¹³ PBS NewsHour, “As Water Levels Rise, This Alaska Town is Fleeing to Higher Ground,” PBS NewsHour, November 28, 2019, YouTube video, 7:38.

¹¹⁴ Lisa Demer. “The Creep of Climate Change.” *Anchorage Daily News*, August 28, 2015.

¹¹⁵ *Ibid.*

1.1.5 Recommendations

Because of government inaction on addressing climate change impacts in Alaska, current solutions have had to be more creative. Whether this means suing oil corporations to gather enough money to relocate, as in the case of Kivalina, or finding ways to use COVID-19 allocated funding that meet the requirement of the CARES Act, as well as help build homes for future residents of Mertarvik, local communities have had to find creative solutions to their practical climate change-induced issues.

Local organizations have had to be creative as well. Climate change means a change in food sources for many Alaskans, especially Native Alaskan individuals, which can lead to food insecurity.¹¹⁶ To combat this, the Alaska Food Policy Council (AFPC) is pushing for Alaska to grow and produce more crops, as the warmer weather and longer warm seasons increase the number of crops that can be grown.¹¹⁷

Creative solutions and measures to adapt to the changing climate are important, but this needs to be done in tandem with government response to protect those who are being impacted by climate change. The State of Alaska's position that the law needs to provide maximum benefits to its residents risks the lives of those who are most at-risk, and this should not be considered an acceptable loss. The state and federal governments need to place more effort on curbing its oil and gas development if it wants to protect its residents and villages

¹¹⁶ Nancy Fresco, "Climate Change Means Alaska will be Able to Grow More Food - Now is the Time to Start Planning," *Fast Company*, June 2, 2022, <https://www.fastcompany.com/90719002/climate-change-means-alaska-will-be-able-to-grow-more-food-now-is-the-time-to-start-planning>.

¹¹⁷ Ibid.

in danger of subsidence. Experts recommend reducing Alaska's development of the oil industry and developing Alaska's hydropower instead,¹¹⁸ since Alaska has a huge potential for hydropower, but this source of renewable energy has remained largely untapped.¹¹⁹ Governments have a responsibility to protect its residents, but Alaska and the United States are failing its people.

Most of the state of Alaska's response to climate change has been reactionary rather than anticipatory. That is, the state has focused on repairing and rebuilding after disaster strikes, but not enough is being done to protect the communities and structures that the state knows will be most impacted by climate change.¹²⁰ One way is to help support communities that need to relocate because the land on which they reside will be subsumed by the sea.

Funding and legislation are some of the biggest barriers in relocation, as well as ensuring that existing communities have access to the services and financing they need while they relocate or plan to relocate. At all levels, there is a lack of government funds being allocated to relocation efforts and helping keep villages safe. While some federal and state funding has been given to villages impacted by climate change in Alaska, it is not nearly enough, and residents are oftentimes kept in dangerous circumstances as a result.¹²¹ There is also no

¹¹⁸ Rand Hagenstein and Corinne Smith, "Alaska Has Incredible Potential for Hydropower, When It's Done Right," *Anchorage Daily News*, May 5, 2016, <https://www.adn.com/commentary/article/alaska-has-incredible-potential-hydropower-when-its-done-right/2016/05/05/>

¹¹⁹ Ibid.

¹²⁰ Suzanne Goldenberg, "An Undeniable Truth?: From Palin to Parnell, Alaska's Politicians Have Struggled to Reconcile Policy with Actuality," *The Guardian*, May 14, 2013.

¹²¹ US Government Accountability Office (GAO), "Alaska Native Villages: Most are Affected by Flooding and Erosion, but Few Qualify for Federal Assistance," GAO, December 12, 2003.

federal agency that works on relocating villages,¹²² so individual villages end up becoming responsible in finding the funds to relocate themselves.¹²³

In the case of Newtok, relocation was planned to take place decades ago, yet the village is still relocating, and rather than relocating *before* their land and home subsides completely, they are being relocated *after* their homes have been destroyed by the sea.¹²⁴ Especially when wider state action, like oil drilling, is exacerbating climate change and adversely impacting communities, the government has a responsibility to ensure these communities are fully supported in relocation efforts. The high cost of relocating villages, often in the hundreds of millions of dollars, should be recognized as a cost of state actions in development. Governments should ensure timely relocation that protects the lives and well-being of populations being displaced.

Since Indigenous communities are the most impacted by climate change in Alaska, more needs to be done to ensure that cultures and communities are maintained and protected. Communities are torn apart during the relocation process due to relocation efforts taking place over the span of many years. Newtok's division into Newtok and the new settlement, Mertarvik, separates social communities and isolates them from each other, which comes with significant impacts on the well being of community members. Overlapping with the COVID-19 pandemic, the already separated community was isolated further, with social events being canceled and relocation delayed even more.

¹²² Adam Wernick and Annie Minoff, "Will These Alaska Villagers be America's First Climate Change Refugees?" *The World*, August 9, 2015.

¹²³ Erica Goode, "A Wrenching Choice for Alaska Towns in Path of Climate Change," *The New York Times*, November 29, 2016.

¹²⁴ PBS NewsHour, "As Water Levels Rise, This Alaska Town is Fleeing to Higher Ground," PBS NewsHour, November 28, 2019, YouTube video, 7:38.

Much like how climate displacement's impact on Indigenous communities is integrated into talks of climate displacement writ large, people with disabilities and older people should be included as well. If they are not included from the beginning, trying to fit them into already drawn up legislation and practices will be much more difficult and discriminating.

1.2 Louisiana

1.2.1 Climate Change

Louisiana's climate changes include sea-level rise, flooding, subsidence, coastal erosion, extreme weather events like hurricanes and storms, drought, and water scarcity.¹²⁵ Louisiana is expected to see increased rainfall, flooding, droughts, humidity, and temperatures in the coming decades.¹²⁶ Extreme weather will be more severe and more deadly, such as more intense hurricanes, rising seas, floods, droughts, and extreme heatwaves.¹²⁷ Louisiana has one of the largest projected increases in dangerously hot days in the United States.¹²⁸ Of these, coastal erosion appears to be the most immediate threat, exacerbated by severe storms and hurricanes.

Louisiana is especially interesting in that the impact of human activity as the cause for climate change is very evident. Louisiana's coastal erosion is four

¹²⁵ United States Environmental Protection Agency (US EPA), "What Climate Change Means for Louisiana," *US EPA*, August 2016.

¹²⁶ *Ibid.*

¹²⁷ Halle Parker, "Climate Change Could Prove More Deadly in Louisiana Without Immediate Action, Report Says," *WWNO - New Orleans Public Radio*, March 3, 2022, <https://www.wwno.org/coastal-desk/2022-03-03/climate-change-could-prove-more-deadly-in-louisiana-without-immediate-action-report-says>.

¹²⁸ The Climate Reality Project, "How is the Climate Crisis Affecting Alaska?" *The Climate Reality Project*, March 11, 2020, <https://www.climateRealityproject.org/blog/how-climate-crisis-affecting-alaska>.

times faster than other areas around the world,¹²⁹ losing about a football field of land every hour (about 16.6 square miles a year).¹³⁰ Man-made decisions have played a huge role in this. First, the U.S. Army Corps of Engineers built levees in the 1920s and 30s to prevent overflows after floods, but this prevented sedimentation to occur, which has then led to water rising, and sinking of the land.¹³¹ In the 1940s, the oil and gas industries again changed the land by tapping into the oil reserves under the Louisiana marshlands, which widened the marshes and allowed for saltwater intrusion, leading to the loss of marshlands and more coastal erosion and flooding.¹³² The most populated areas of the state are below sea level and are currently protected by levees, but water can rise above these levees during storms and lead to severe flooding, such as after Hurricane Katrina in 2005.¹³³

The changing climate threatens coastal Louisiana to the point where land and cities will be lost to the sea.¹³⁴ Measures must be put in place quickly if global warming is to be kept within a range where people can still adapt.¹³⁵ According to a study, the coastal wetlands can survive climate change if there is

¹²⁹ Duy Linh Tu and Julian Lim, "On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change," *Scientific American*, June 15, 2021, <https://www.scientificamerican.com/article/on-the-louisiana-coast-an-indigenous-community-loses-homes-to-climate-change/>.

¹³⁰ Roby Chavez, "How Rising Sea Levels Threaten the Lives of Louisiana's Coastal Residents," *PBS NewsHour*, April 5, 2022, <https://www.pbs.org/newshour/nation/difficult-conversations-how-rising-sea-levels-threaten-the-lives-of-louisianas-coastal-residents>.

¹³¹ Duy Linh Tu and Julian Lim, "On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change," *Scientific American*, June 15, 2021.

¹³² Ibid.; "Louisiana Disappearing: Living on the Brink of Climate Change," AJ+, December 2, 2015, YouTube video, 5:14, https://www.youtube.com/watch?v=4THdX9KQZ_4.

¹³³ United States Environmental Protection Agency (US EPA), "What Climate Change Means for Louisiana," *US EPA*, August 2016.

¹³⁴ Roby Chavez, "How Rising Sea Levels Threaten the Lives of Louisiana's Coastal Residents," *PBS NewsHour*, April 5, 2022.

¹³⁵ Halle Parker, "Climate Change Could Prove More Deadly in Louisiana Without Immediate Action, Report Says," *WWNO - New Orleans Public Radio*, March 3, 2022.

human intervention to promote conservation and curb development, but without human help, Louisiana will lose 100% of its wetlands.¹³⁶

Climate migration is not happening equitably due to gaps in federal disaster recovery programs.¹³⁷ According to Camille Manning-Broome, Executive Director of the Center for Planning Excellence, a non-profit that works to promote climate adaptation and disaster resilience, “with each storm, those without the means to move are left behind with no other choice than to rebuild.”¹³⁸ The lowest elevation neighborhoods have historically been the poorest, and these communities are the ones who have to deal with the consequences of flooding and hurricanes the most.¹³⁹ Additionally, recovery is much slower in these areas—which are predominantly African American—than in other areas.¹⁴⁰ There are some who want to relocate but are unable to move, so they live in fear of storms and potentially losing their homes and have to rebuild after each hurricane.¹⁴¹

Many people are choosing to migrate. Since 2020, Louisiana has lost more than 27,000 people, according to the U.S. Census.¹⁴² After Hurricane

¹³⁶ Maya K. Buchanan, Scott Kulp, and Benjamin Strauss, “Resilience of U.S. Coastal Wetlands to Accelerating Sea Level Rise,” *Environmental Research Communications* 4, no. 6 (2022): <https://iopscience.iop.org/article/10.1088/2515-7620/ac6eef>.

¹³⁷ Halle Parker, “Climate Change Could Prove More Deadly in Louisiana Without Immediate Action, Report Says,” *WWNO - New Orleans Public Radio*, March 3, 2022.

¹³⁸ *Ibid.*

¹³⁹ The Climate Reality Project, “How the Climate Crisis Is Affecting Louisiana,” Climate Reality Project, February 18, 2020, <https://www.climateRealityProject.org/blog/how-climate-crisis-affecting-louisiana>.

¹⁴⁰ “How New Orleans Sank Below Sea Level (And What They’re Doing About It),” *Grist*, August 27, 2020, YouTube video, 7:55, <https://www.youtube.com/watch?v=9pqzMkMWS0A>.

¹⁴¹ Emily Woodruff, “In Best of Times, New Orleans is Hard on People with Disabilities. In Hurricanes, It’s Deadly,” *NOLA*, June 11, 2022, https://www.nola.com/news/healthcare_hospitals/article_df0265d4-e803-11ec-b4e6-af58cbe03909.html.

¹⁴² Roby Chavez, “How Rising Sea Levels Threaten the Lives of Louisiana’s Coastal Residents,” *PBS NewsHour*, April 5, 2022.

Katrina in 2005, nearly 275,000 residents left.¹⁴³ There is a “larger exodus” around storms, but more people are expected to leave Louisiana in the coming years as climate change continues to threaten the coast.¹⁴⁴

1.2.2 Impacts on People with Disabilities and Older People

People with disabilities and older people have taken the brunt of the casualties and injuries caused by climate change.¹⁴⁵ These populations are more vulnerable to the effects of climate change, and their outcomes are much worse than those of younger populations.¹⁴⁶ The most famous example of this is the lack of accessibility before, during, and after Hurricane Katrina, resulting in the deaths of many older people and people with disabilities.¹⁴⁷

For instance, during Hurricane Katrina, 71% of the people who died were over the age of 60, many of whom had disabilities.¹⁴⁸ According to the EPA, nearly half of deaths during Hurricane Sandy in 2012 were among people over the age of 65.¹⁴⁹ During evacuations following Katrina, people with disabilities

¹⁴³ Ibid.

¹⁴⁴ Ibid.

¹⁴⁵ Centers for Disease Control and Prevention (CDC), “CDC’s Disaster Planning Goal: Protect Vulnerable Older Adults,” *CDC*, Accessed June 24, 2022, 1, https://www.cdc.gov/aging/pdf/disaster_planning_goal.pdf; Federal Emergency Management Agency (FEMA), “Preparing for Disaster for People with Disabilities and Other Special Needs,” *U.S. Department of Homeland Security & American Red Cross*, August 2004, https://www.redcross.org/content/dam/redcross/atg/PDF_s/Preparedness_Disaster_Recovery/General_Preparedness_Recovery/Home/A4497.pdf.

¹⁴⁶ United States Environmental Protection Agency (US EPA), “What Climate Change Means for Louisiana,” *US EPA*, August 2016.

¹⁴⁷ Molly Walsh-Warder, “The Disproportionate Impact of Hurricane Katrina on People with Disabilities,” *National Council on Disability*, 2006, https://mdsoar.org/bitstream/handle/11603/3744/Verge13_Walsh-WarderMolly.pdf?sequence=1&isAllowed=y.

¹⁴⁸ Kathleen Otte, “No One Left Behind: Including Older Adults and People with Disabilities in Emergency Planning,” *Administration for Community Living (ACL)*, September 4, 2015, <https://acl.gov/news-and-events/acl-blog/no-one-left-behind-including-older-adults-and-people-disabilities#:~:text=According%20to%20a%20White%20House,left%20behind%20in%20Hurricane%20Katrina.%E2%80%9D>.

¹⁴⁹ Mary Casey-Lockyer et al., “Deaths Associated with Hurricane Sandy - October-November 2012,” *Morbidity and Mortality Weekly Report* 62 (May 2013): 393-39,

and older people faced difficulties in evacuating, because many evacuation buses did not have wheelchair ramps or required a wait of many hours in temperatures over 90 degrees Fahrenheit (32.2 degrees Celsius).¹⁵⁰ At some shelters, people with disabilities were denied access, could not enter because of accessibility issues, or kept in a separate area to the general population.¹⁵¹ People with psychiatric disabilities especially faced difficulties in gaining access to and receiving fair treatment in evacuation shelters.¹⁵² Evacuation information was often not made accessible to people with disabilities.¹⁵³ More than 200,000 people with chronic medical conditions were unable to access medication and care during evacuation.¹⁵⁴

Many people with disabilities and older people were abandoned by their caretakers,¹⁵⁵ and some nursing homes abandoned their residents,¹⁵⁶ and evacuations were severely mismanaged.¹⁵⁷ Many abandoned residents of care homes ended up drowning in their beds.¹⁵⁸ In one facility, 70 nursing home

https://www.researchgate.net/publication/282254463_Deaths_Associated_with_Hurricane_Sandy_-_October-November_2012.

¹⁵⁰ Kathleen Otte, "No One Left Behind: Including Older Adults and People with Disabilities in Emergency Planning," *Administration for Community Living (ACL)*, September 4, 2015.

¹⁵¹ Molly Walsh-Warder, "The Disproportionate Impact of Hurricane Katrina on People with Disabilities," *National Council on Disability*, 2006.

¹⁵² National Council on Disability (NCD), "Needs of People with Disabilities with Psychiatric Disabilities During and After Hurricanes Katrina and Rita: Position Paper and Recommendations," *National Council on Disability*, July 7, 2006, <https://ncd.gov/publications/2006/07142006>.

¹⁵³ Kathleen Otte, "No One Left Behind: Including Older Adults and People with Disabilities in Emergency Planning," *Administration for Community Living (ACL)*, September 4, 2015.

¹⁵⁴ CDC, "CDC's Disaster Planning Goal"; John Bel Edwards, "Climate Initiatives Task Force," *Office of the Governor*, Accessed June 16, 2022, <https://gov.louisiana.gov/page/climate-initiatives-task-force>

¹⁵⁵ Ibid.

¹⁵⁶ Ibid.

¹⁵⁷ National Council on Disability (NCD), "Needs of People with Disabilities with Psychiatric Disabilities During and After Hurricanes Katrina and Rita: Position Paper and Recommendations," *National Council on Disability*, July 7, 2006.

¹⁵⁸ Walsh-Warder, "Disproportionate Impact of Hurricane Katrina."

residents died.¹⁵⁹ Emergency officials lost residents of group homes and psychiatric facilities, many of whom are still missing.¹⁶⁰ Some people with psychiatric disabilities were involuntarily institutionalized instead of being taken to evacuation shelters, and many were kept in institutions more than a year after Hurricane Katrina.¹⁶¹ As Jordan Melograna puts it, “During Katrina, people with disabilities were denied the right to be rescued.”¹⁶²

Famously, a 91-year-old woman, Ethel Freeman, survived the hurricane but died, abandoned outside an emergency center.¹⁶³ According to her family’s lawyer, who filed a lawsuit for the negligence of Freeman, “[Ethel Freeman] survived the storm. The storm didn’t get her. She didn’t survive the rescue.”¹⁶⁴

People with disabilities are five times more likely to die in a natural disaster like hurricanes and storms than people without disabilities.¹⁶⁵ The lasting impact of natural disasters for survivors is much worse in people with disabilities as well.¹⁶⁶ People with disabilities can lose homes that have been accommodated to their needs, specialist equipment, and medicine.¹⁶⁷ Many people with disabilities and older people end up alone and homeless after hurricanes,

¹⁵⁹ CDC, “CDC’s Disaster Planning Goal”; John Bel Edwards, “Climate Initiatives Task Force,” *Office of the Governor*, Accessed June 16, 2022.

¹⁶⁰ National Council on Disability (NCD), “Needs of People with Disabilities with Psychiatric Disabilities During and After Hurricanes Katrina and Rita: Position Paper and Recommendations,” *National Council on Disability*, July 7, 2006.

¹⁶¹ *Ibid.*

¹⁶² Jordan Melograna, “People with Disabilities Left Behind During Katrina Tell their Stories,” *HuffPost*, August 27, 2015, https://www.huffpost.com/entry/people-with-disabilities-_2_b_8045700; Otte, “No One Left Behind”; *The Right to be Rescued*, directed by Jordan Melograna (Rooted in Rights, 2015), 15:18, <https://www.youtube.com/watch?v=FIFEvqafklk>.

¹⁶³ Leanne McNulty, “Disability Rights is a Climate Justice Issue. Here’s Why,” *Green is the New Black*, January 25, 2022.

¹⁶⁴ *Ibid.*

¹⁶⁵ *Ibid.*

¹⁶⁶ *Ibid.*

¹⁶⁷ *Ibid.*

especially when their caregivers die or become sick.¹⁶⁸ Overall, evacuation plans did not adequately account for the needs of older adults and people with disabilities.¹⁶⁹

The National Council on Disability reported on the impact of Hurricanes Katrina and Rita on people with disabilities in 2006,¹⁷⁰ and in 2015, around the 10-year anniversary of Hurricane Katrina, many outlets reported on the neglect of people with disabilities and older people in emergencies.¹⁷¹ Because of the dire consequences of such neglect, some effort to make emergency plans more inclusive have been made since Katrina, but it is still lacking.¹⁷²

For example, New Orleans created a special needs registry in 2013 for those who need additional assistance in emergencies, but many who were on the registry were not given the assistance they needed during hurricanes, and only a portion of those with disabilities knew about the registry.¹⁷³ The special needs registry has now been dismantled in favor of a new system, Smart911, which is a system for everyone but that may also benefit people with disabilities, however there are issues with this system as well.¹⁷⁴ Disability advocates are critical of

¹⁶⁸ Anna Lenhart, "10 Years After Katrina: Are We Ready with Accessible Emergency Preparedness?" *New Editions Consulting, Inc.*, Accessed 20 June 2022, <https://www.neweditions.net/blogs/10-years-after-katrina-are-we-ready-accessible-emergency-preparedness>.

¹⁶⁹ Leanne McNulty, "Disability Rights is a Climate Justice Issue. Here's Why," *Green is the New Black*, January 25, 2022.

¹⁷⁰ Lex Frieden, "The Impact of Hurricanes Katrina and Rita on People with Disabilities: A Look Back and Remaining Challenges," *National Council on Disability*, August 3, 2006, <https://files.eric.ed.gov/fulltext/ED496270.pdf>.

¹⁷¹ Jordan Melograna, "People with Disabilities Left Behind During Katrina Tell their Stories," *HuffPost*, August 27, 2015.; Otte, "No One Left Behind"; *The Right to be Rescued*, directed by Jordan Melograna (Rooted in Rights, 2015), 15:18.

¹⁷² Anna Lenhart, "10 Years After Katrina: Are We Ready with Accessible Emergency Preparedness?" *New Editions Consulting, Inc.*, Accessed 20 June 2022.

¹⁷³ Emily Woodruff, "In Best of Times, New Orleans is Hard on People with Disabilities. In Hurricanes, It's Deadly," *NOLA*, June 11, 2022.

¹⁷⁴ *Ibid.*

Smart911, since using it requires knowledge of and access to technology, which many older people do not have.¹⁷⁵

Another key issue is that buildings in low-income areas are still ill-equipped to support the needs of people with disabilities and older people in emergency situations, with fatal consequences.¹⁷⁶ People with disabilities and older people are still being disproportionately impacted by emergency weather events in Louisiana.¹⁷⁷ On a national level, the Centers for Disease Control and Prevention (CDC) has guidelines on how best to help people with disabilities and older people in emergencies,¹⁷⁸ but it is the state and specific regions and cities that are in charge of creating emergency preparedness and evacuation plans.

While many people's response to Louisiana's precarious climate and susceptibility to hurricanes and floods is to migrate to safer lands, some people with disabilities are less able to move.¹⁷⁹ For example, a family in New Orleans attempted to relocate following Hurricane Katrina, but they had to return to New Orleans because one family member with autism, Clarke, had difficulty adjusting to a new environment.¹⁸⁰ For people with autism, routines and familiarity are very important, and moving to an unfamiliar environment put Clark's life in danger, as he would attempt to regain his routine by returning to New Orleans by running

¹⁷⁵ Ibid.

¹⁷⁶ Ibid.

¹⁷⁷ Ibid.

¹⁷⁸ CDC, "Disability and Health Promotion: Disability & Health Emergency Preparedness," *CDC*, September 15, 2020, <https://www.cdc.gov/ncbddd/disabilityandhealth/emergencypreparedness.html>.

¹⁷⁹ Emily Woodruff, "In Best of Times, New Orleans is Hard on People with Disabilities. In Hurricanes, It's Deadly," *NOLA*, June 11, 2022.

¹⁸⁰ Ibid.

across a highway.¹⁸¹ Even climate displacement is less accessible to those with disabilities.

In addition to the lack of disability and older-people-inclusive disaster plans, extreme natural disasters such as hurricanes and storms can cause mental distress, and if severe enough, psychosocial disabilities. Experiencing floods and flood risk leads to increased instances of depression, as well as increased use of alcohol and tobacco.¹⁸² The CDC estimates that 40% of evacuees during Hurricane Katrina developed post-traumatic stress disorder (PTSD) following the disaster.¹⁸³ Older people are more reluctant to seek mental health services compared to younger people, so they may be more vulnerable to poor mental health following natural disasters.¹⁸⁴

1.2.3 Laws, Policies, and Government Response

Louisiana has many laws and policies on climate change and climate events,¹⁸⁵ possibly because of the extensive media coverage and public awareness of natural disasters such as Hurricane Katrina and other particularly disastrous storms. Louisiana has a record of actions being taken to minimize climate change. For instance, federal, state, and local governments have ongoing projects to slow land loss in Louisiana.¹⁸⁶ Laws and policies specifically

¹⁸¹ Ibid.

¹⁸² Louisiana Governor's Office of Coastal Activities, "Louisiana Climate Action Plan: Draft Final Report," *State of Louisiana*, December 22, 2021, <https://gov.louisiana.gov/assets/docs/CCI-Task-force/website/CTFDraftFinalPlan12222021.pdf>.

¹⁸³ Centers for Disease Control and Prevention (CDC), "CDC's Disaster Planning Goal: Protect Vulnerable Older Adults," *CDC*, Accessed June 24, 2022, 1.

¹⁸⁴ Ibid.

¹⁸⁵ Georgetown Climate Center, "Overview of Louisiana's Climate Change Preparations," *Georgetown Climate Center*, Accessed June 16, 2022, <https://www.georgetownclimate.org/adaptation/state-information/louisiana/overview.html>.

¹⁸⁶ United States Environmental Protection Agency (US EPA), "What Climate Change Means for Louisiana," *US EPA*, August 2016.

mention older people (referred to as the “elderly”) and people with disabilities, but only to mention that they are more vulnerable in extreme weather events.¹⁸⁷ Advice and plans to have more inclusive plans to reduce vulnerabilities and ensure people with disabilities and older people are not disproportionately impacted by climate change is not mentioned.

The State of Louisiana has multiple plans to address climate change and its impacts. After Hurricanes Katrina and Rita in 2005, Louisiana developed the Louisiana Coastal Master Plan that includes coastal restoration efforts and protection projects aimed at mitigating land loss and reducing risks to coastal communities.¹⁸⁸ Updated every five years to reflect changes in science and environmental conditions, the plan has an estimated cost of over \$50 billion over 50 years, with most of the funding coming from the State of Louisiana.¹⁸⁹

Louisiana’s Strategic Adaptations for Future Environments (LA SAFE) was created after Hurricane Katrina in 2005 and the Great Floods of 2016 to address flood risks in six coastal parishes.¹⁹⁰ Costing \$47 million, SAFE recommends policy changes to mitigate future flood risks and build community resilience.¹⁹¹

¹⁸⁷ Centers for Disease Control and Prevention (CDC), “CDC’s Disaster Planning Goal: Protect Vulnerable Older Adults,” *CDC*, Accessed June 24, 2022, 1.; John Bel Edwards, “Climate Initiatives Task Force,” *Office of the Governor*, Accessed June 16, 2022.; State of Louisiana, “Louisiana Climate Action Plan.”

¹⁸⁸ RESTORE the Mississippi River Delta, “Louisiana’s 2017 Coastal Master Plan,” *RESTORE the Mississippi River Delta*, Accessed June 17, 2022, <https://mississippiriverdelta.org/masterplan/>; RESTORE the Mississippi River Delta, “Funding,” *RESTORE the Mississippi River Delta*, Accessed June 17, 2022.

¹⁸⁹ RESTORE the Mississippi River Delta, “Funding,” *RESTORE the Mississippi River Delta*, Accessed June 17, 2022.

¹⁹⁰ Louisiana’s Strategic Adaptations for Future Environments (LA SAFE), “Regional & Parish Adaptation Strategies,” *LA SAFE*, 2019, <https://lasafe.la.gov/>.

¹⁹¹ Sabrina Shankman, “Louisiana’s New Climate Plan Prepares for Resilience and Retreat as Sea Level Rises,” *Inside Climate News*, May 17, 2019, <https://insideclimatenews.org/news/17052019/louisiana-climate-migration-plan-retreat-sea-level-rise-global-warming/>.

This plan boasts of its use of diverse expertise, but whether this includes the perspectives of older people and people with disabilities is uncertain.¹⁹² The Watershed Initiative is another state-level plan to mitigate flood risk.¹⁹³ Stakeholders across five state agencies work together to reduce flooding, with \$440 million for the initiative from the state and \$1.2 billion from federal grants.¹⁹⁴

The most recent development is the Climate Initiative Task Force established in 2020 by Louisiana's governor, John Bel Edwards, to reduce Louisiana's net greenhouse gas (GHG) emissions to zero by 2050.¹⁹⁵ The task force members include the government, private sector, academia, environmental and community advocates, and volunteers, and together, they have approved the state's first Climate Action Plan in 2022.¹⁹⁶ The plan specifically mentions people with disabilities and older people as being more vulnerable to extreme weather events, but these communities are mentioned only in passing.¹⁹⁷ While older people are mentioned five times as either "senior citizens" or "the elderly," people with disabilities are only mentioned once.¹⁹⁸

Alongside state initiatives addressing climate change and its impacts are city, regional, and federal initiatives. For example, cities like New Orleans have their own master plans to reduce flood hazards and minimize soil subsidence to

¹⁹² LA SAFE, "Our Mission," *LA SAFE*, Accessed June 17, 2022, <https://lasafe.la.gov/about-us/>.

¹⁹³ Louisiana Watershed Initiative, "Creating a More Resilient Louisiana," *Louisiana Watershed Initiative*, Accessed June 16, 2022, <https://watershed.la.gov/>.

¹⁹⁴ *Ibid.*

¹⁹⁵ CDC, "CDC's Disaster Planning Goal"; John Bel Edwards, "Climate Initiatives Task Force," *Office of the Governor*, Accessed June 16, 2022.

¹⁹⁶ *Ibid.*

¹⁹⁷ *Ibid.*

¹⁹⁸ *Ibid.*

stop the land from sinking and disappearing into the sea.¹⁹⁹ On a regional level, the Gulf Coast of the United States, which includes Alabama, Florida, Louisiana, Mississippi, and Texas, had its first environmental justice festival, the Gulf Gathering for Climate Justice and Joy, in June 2022 with more than 300 organizations taking part.²⁰⁰ At the federal level, the President Barack Obama administration held the National Disaster Resilience Competition in June 2014 to award \$1 billion to a community that has experienced natural disasters.²⁰¹

¹⁹⁹ Michelle Mehta, “New Orleans, Louisiana: Identifying and Becoming More Resilient to Impacts of Climate Change,” *Natural Resources Defense Council (NRDC)*, July 2011, https://www.nrdc.org/sites/default/files/ClimateWaterFS_NewOrleansLA.pdf.

²⁰⁰ Kezia Setyawati, “To Combat Climate Change, Gulf Groups to Hold 1st Environmental Justice Festival in Baton Rouge,” *WWNO - New Orleans Public Radio*, June 1, 2022, <https://www.wwno.org/coastal-desk/2022-06-01/to-combat-climate-change-gulf-states-come-together-for-environmental-justice-festival>.

²⁰¹ Office of the Press Secretary, “Fact Sheet: National Disaster Resilience Competition,” *The White House*, June 14, 2014, <https://obamawhitehouse.archives.gov/the-press-office/2014/06/14/fact-sheet-national-disaster-resilience-competition>.

1.2.4 Case Study: Isle de Jean Charles



Figure 3. Aerial image of Isle de Jean Charles.²⁰²

The Isle de Jean Charles is a disappearing community in Louisiana that has gained a lot of popular attention, with documentaries being produced about the island and its struggles in relocating.²⁰³ 98% of the land has been lost due to saltwater intrusion, rising sea levels, floods, and subsidence.²⁰⁴ This is due to a combination of climate change and man-made interventions.²⁰⁵ Climate change has brought higher sea levels and more frequent and harsher storms, caused by

²⁰² William Widmer, "A Louisiana Tribe's Long Fight Against the American Tide," photograph, *Oxford American*, September 3, 2019, <https://main.oxfordamerican.org/magazine/item/1816-goodbye-to-good-earth>.

²⁰³ *Can't Stop the Water*, directed by Rebecca Ferris and Jason Ferris (Cottage Films, 2013), 33:05, <https://vimeo.com/68436745>.

²⁰⁴ Duy Linh Tu and Julian Lim, "On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change," *Scientific American*, June 15, 2021.

²⁰⁵ Ibid.

the warming of the atmosphere that wash away more land.²⁰⁶ Oil and gas drilling has destroyed much of the wetlands that protect the land, thereby accelerating erosion,²⁰⁷ and in 2002, the U.S. Army Corps of Engineers decided to leave Isle de Jean Charles out of a new levee system, thereby exposing it to flooding.²⁰⁸

Isle de Jean Charles is the first community to be given funding by the U.S. government.²⁰⁹ In 2016, Isle de Jean Charles was given \$48 million from the United States Department of Housing and Urban Development under the Obama administration to relocate and build a new community.²¹⁰ This marks the Isle de Jean Charles residents as the first state-recognized “climate refugees” in the United States.²¹¹

With the funding to build a new community, residents are able to relocate for free but need to give up their residence in the Isle de Jean Charles,²¹² which some are reluctant to do due to their deep ties to the land and their existing way

²⁰⁶ Bob Marshall, “The People of Isle de Jean Charles Aren’t the Country’s First Climate Refugees,” *The Lens*, December 6, 2016.

²⁰⁷ Ibid.

²⁰⁸ Clint Parks, “The Biloxi-Chitimacha-Choctaw Community and Their Land,” *National Geographic*, May 20, 2022, <https://education.nationalgeographic.org/resource/biloxi-chitimacha-choctaw-community-and-their-land>.

²⁰⁹ Bob Marshall, “The People of Isle de Jean Charles Aren’t the Country’s First Climate Refugees,” *The Lens*, December 6, 2016.; Clint Parks, “The Biloxi-Chitimacha-Choctaw Community and Their Land,” *National Geographic*, May 20, 2022.; Duy Linh Tu and Julian Lim, “On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change,” *Scientific American*, June 15, 2021.

²¹⁰ Coral Davenport and Campbell Robertson, “Carbon’s Casualties: Resettling the First American ‘Climate Refugees,’” *The New York Times*, May 2, 2016, <https://www.nytimes.com/2016/05/03/us/resettling-the-first-american-climate-refugees.html?smid=tw-nytimes&smtyp=cur&r=0>; Clint Parks, “The Biloxi-Chitimacha-Choctaw Community and Their Land,” *National Geographic*, May 20, 2022.

²¹¹ Coral Davenport and Campbell Robertson, “Carbon’s Casualties: Resettling the First American ‘Climate Refugees,’” *The New York Times*, May 2, 2016.

²¹² Duy Linh Tu and Julian Lim, “On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change,” *Scientific American*, June 15, 2021.

of life.²¹³ Their lives are largely based on fishing and crabbing, but this will not be possible in the new settlement.²¹⁴ Most people have moved, but there are four families remaining.²¹⁵

The Biloxi-Chitimacha-Chotaw tribe make up the majority of the residents on the island,²¹⁶ and one of their concerns is that their tribe, and subsequently their culture, cannot remain intact with the relocation.²¹⁷ Only those who were displaced in 2012 after Hurricane Isaac are eligible to relocate to the new settlement, but many chose to relocate earlier.²¹⁸ Any land and houses not given to Isle de Jean Charles residents will be sold to the general public, so members of the tribe are concerned that they will lose their tribal community in the move.²¹⁹ The tribe had wanted to move as an entire community to keep their traditions and culture together and alive, but they are now unable to do so.²²⁰ According to former Chief Albert Naquin, “We don’t mingle like we used to.” He adds, “We’re going to lose all our heritage, all our cultures [...] It’s all going to be history.” Naquin blames the state for mismanaging money that is supposed to be allocated to the Isle de Jean Charles community: “the state stole our plan to get

²¹³ Jenny Jarvie, “On a Sinking Louisiana Island, Many Aren’t Ready to Leave,” *Los Angeles Times*, April 23, 2019, <https://www.latimes.com/nation/la-na-jean-charles-sinking-louisiana-island-20190423-htlstory.html>.

²¹⁴ Brad Brooks, “A Climate Change Challenge in Louisiana: Escape the Danger While Retaining Community,” *Reuters*, April 22, 2021, <https://www.reuters.com/business/sustainable-business/climate-change-challenge-louisiana-escape-danger-while-retaining-community-2021-04-22/>.

²¹⁵ Duy Linh Tu and Julian Lim, “On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change,” *Scientific American*, June 15, 2021.

²¹⁶ Unitarian Universalist Service Committee (UUSC), “Climate Change in Louisiana,” *UUSC*, Accessed June 19, 2022, <https://www.uusc.org/climate-change-in-louisiana/>.

²¹⁷ Duy Linh Tu and Julian Lim, “On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change,” *Scientific American*, June 15, 2021.

²¹⁸ Jenny Jarvie, “On a Sinking Louisiana Island, Many Aren’t Ready to Leave,” *Los Angeles Times*, April 23, 2019.

²¹⁹ *Ibid.*

²²⁰ *Ibid.*

the money and now they are running off with it [...] It wasn't for the white folks. We were supposed to have a tribal community [...] Now anybody can go.”²²¹

1.2.5 Recommendations

A key criticism of Louisiana's current approach to mitigating climate change impacts is that plans like the Louisiana Coastal Master Plan do not provide immediate solutions, as governing bodies are relying on the long-term reduction of GHG to combat climate change.²²² This means states are looking to improve impacts 25 years ahead, rather than addressing the impacts on populations now.²²³ This leads to individuals and communities needing to provide immediate solutions themselves.²²⁴ For example, Healthy Community Services is a non-profit in New Orleans that attempts to mitigate flood impacts by adding to communities building materials, street materials, and plants that absorb water, effectively rendering New Orleans a “sponge.”²²⁵ These additions are meant to complement larger city projects that focus on mitigating long-term climate change impacts, but city, state, and federal plans should be comprehensive enough to reduce glaring gaps that require individual and community effort to fill.²²⁶

There also needs to be less of a focus on technocratic solutions and more on restoring and protecting the environment so that natural protection mechanisms can be restored. In the case of Louisiana, levees, in addition to

²²¹ Ibid.

²²² “How New Orleans Sank Below Sea Level (And What They're Doing About It),” Grist, August 27, 2020, YouTube video, 7:55.

²²³ Ibid.

²²⁴ Ibid.

²²⁵ Ibid.

²²⁶ Ibid.

human activity like oil drilling, caused initial land loss problems, as levees prevented sediment from forming and protecting the land.²²⁷ Solutions now are still technocratic. The focus in areas like New Orleans is installing pumping systems that remove rainwater, which cannot drain naturally.²²⁸ New levees were built near Isle de Jean Charles that make the community more susceptible to flooding and erosion.²²⁹ Rather than introducing more technological systems that make the land less able to restore its natural barriers, solutions to restoring natural barriers should be included.

For example, increasing wetland protects land and communities from the impacts of hurricanes, storms, and erosion, as wetlands act as a barrier that prevent water from reaching habitable land.²³⁰ Recognizing this, government interventions like the Coastal Master Plan include efforts to increase wetlands but with a technocratic approach. The Coastal Master Plan is supposed to be based on the “best available science,”²³¹ but according to Edward Richards, a professor at Louisiana State University’s Law Center, the plan is scientifically questionable.²³²

The Coastal Master Plan includes recreating lost wetland by moving material

²²⁷ Global Site Plans - The Grid, “Urban Risk: Will New Orleans be Submerged by 2040?,” *Smart Cities Dive*, Accessed June 18, 2022, <https://www.smartcitiesdive.com/ex/sustainablecitiescollective/last-call-will-nola-be-completely-submerged-2040/168826/>.

²²⁸ United States Environmental Protection Agency (US EPA), “What Climate Change Means for Louisiana,” *US EPA*, August 2016.

²²⁹ Bob Marshall, “The People of Isle de Jean Charles Aren’t the Country’s First Climate Refugees,” *The Lens*, December 6, 2016.

²³⁰ Climate Central, “Study Pinpoints Coastal Wetlands Capable of Surviving Climate Change - With Human Help,” *Cision PR Newswire*, June 8, 2022, <https://www.prnewswire.com/news-releases/study-pinpoints-coastal-wetlands-capable-of-surviving-climate-change-with-human-help-301564000.html>.

²³¹ John Bel Edwards, “Climate Initiatives Task Force,” *Office of the Governor*, Accessed June 16, 2022.

²³² Edward Richards, “Why the Master Plan will not Protect Louisiana and What We Should Do Instead,” *LSU Law Center: Climate Change Law and Policy Project*, February 21, 2017, <https://sites.law.lsu.edu/coast/2017/02/why-the-master-plan-will-not-protect-the-coast-and-what-we-should-do-instead/>.

from the channel of the Mississippi River to areas with lost wetlands.²³³ While endeavors like these have been effective in restoring wetlands, these solutions may not be long lasting. Since coastal erosion is known to be occurring, replaced lost land will eventually be eroded again. There may also be unintended consequences of displacing the natural materials in the Mississippi River and moving them to a new area. This movement of material also increases carbon emissions in its attempt to reduce the adverse impacts of increased carbon emissions, as oil-reliant heavy machinery is needed to move the materials back and forth.

There are, however, far simpler and less damaging solutions. A study published in June 2022 found that full conservation efforts can not only mitigate adverse impacts but reverse it as well.²³⁴ West Baton Rouge County in Louisiana can restore 1155% of its wetland area with full conservation, while Lafayette County can increase its wetland area by 297%.²³⁵ With full development, however, both countries will lose 100% of their wetland area.²³⁶ Human activity was what led to the loss of wetland area in Louisiana, and rather than increasing human activity to restore it, limiting human activity is an effective way to bring back the natural barrier that human activity destroyed.

²³³ Devyani Kar, "Climate Change Threatens Louisiana's Future, but the State is Taking Bold Action to Increase its Resilience," *Environmental Defense Fund (EDF)*, July 22, 2021, <https://blogs.edf.org/climate411/2021/07/22/climate-change-threatens-louisianas-future-but-the-state-is-taking-bold-action-to-increase-its-resilience/>.

²³⁴ Maya K. Buchanan, Scott Kulp, and Benjamin Strauss, "Resilience of U.S. Coastal Wetlands to Accelerating Sea Level Rise," *Environmental Research Communications* 4, no. 6 (2022).

²³⁵ Climate Central, "Study Pinpoints Coastal Wetlands Capable of Surviving Climate Change - With Human Help," *Cision PR Newswire*, June 8, 2022.

²³⁶ *ibid.*

While mitigating climate change impacts is important, there also needs to be more effort to protect populations in the meantime. Much more effort needs to be put in to consider the needs of people with disabilities and older people in evacuation efforts. Since Hurricane Katrina in 2005, Louisiana has seen many destructive hurricanes, but support for people with disabilities and older people is still lacking, and the costly consequence is death.²³⁷ Local, state, and federal governments need to not only recognize the need for a more concerted effort to protect these communities but also address these needs with more imminency, since hurricanes and storms will only get more frequent and severe. An evaluation of how current measures to improve support for people with disabilities and older people should be conducted, with recommendations for improvement. Alert systems for people with disabilities and older people should also be made accessible and in a format that is easy for people to understand.

There also needs to be more training for emergency services, care home coordinators, and caregivers so that they know how to best support people during natural disasters. People with disabilities and older people should be consulted and included in the planning of emergency and evacuation plans, as currently, their needs and perspectives are not included in federal, state, and local climate action plans, and they are dying at much higher rates because protective mechanisms are not in place.

Additionally, storm recovery should include trauma support to those who need additional mental health care following storms. Even before storms occur,

²³⁷ Lex Frieden, "The Impact of Hurricanes Katrina and Rita on People with Disabilities: A Look Back and Remaining Challenges," *National Council on Disability*, August 3, 2006.

these systems should be in place and made aware to people so they are able to access care following storms. As poorer populations are more prone to long-lasting impacts from storms, have more difficulty recovering from disaster, and are less likely to migrate to areas with safer climates, there should be additional support for this population.

1.3 Conclusion

Climate change has led to the displacement of entire communities in Alaska and Louisiana, especially among Indigenous populations. People with disabilities and older people, among other at-risk populations, are also disproportionately adversely affected.

The evidence suggests that while climate change is a driver of displacement and adverse impacts that threaten the lives of many, climate change by itself does not create the systems and structures that have led to the displacements of thousands. Rather, human intervention, as well as lack of human intervention, is what allows climate change to result in displacement.

First, human activity is what exacerbates climate change and accelerates global warming to a level that is not adaptable or reversible.²³⁸ In Louisiana, installation of levees and oil drilling activity caused wetland and marshland destruction, which led to coastal erosion that now puts communities at risk of severe flooding and loss of land. In Alaska, oil drilling has contributed immensely to carbon gas emissions, which has led to global warming, consequently

²³⁸ US EPA, "Causes of Climate Change," *US EPA*, August 19, 2022, <https://www.epa.gov/climatechange-science/causes-climate-change>.

resulting in a rise in sea level and coastal erosion so severe that communities are losing their homes, land, and lives to the sea.

While these human activities threaten the viability of communities due to their impacts on climate change, the lack of human intervention is what ultimately leads to displacement. On some level, climate change is inevitable. Climate change has been taking place before human activity has made a significant impact on the environment.²³⁹ Human-induced climate change is where the lack of human intervention has led to situations of climate displacement. Human activity has led to such a steep rise in global greenhouse gas emissions that the rate of climate change is at a dangerous level, and limiting harmful human activity has not been done early or significantly enough.²⁴⁰

Additionally, the lack of human intervention before, during, and after natural disasters leads to displacement. Current government plans leave at-risk communities, such as people with disabilities and older people, out of protective policies and plans. The lack of dependable funding is also creating forced displacement in communities by delaying relocation to the point where communities are not voluntarily moving ahead of more disastrous climate events, but have no other choice than to move because their lives and homes are now under threat. There needs to be a coordinated effort to relocate communities so that relocation does not take decades. Particular care should be placed on

²³⁹ Renee Cho, "How We Know Today's Climate Change is Not Natural," *Columbia Climate School: Climate, Earth, and Society*, April 4, 2017, <https://news.climate.columbia.edu/2017/04/04/how-we-know-climate-change-is-not-natural/>.

²⁴⁰ Intergovernmental Panel on Climate Change (IPCC), "Climate Change: A Threat to Human Wellbeing and Health of the Planet. Taking Action Now Can Secure Our Future," *IPCC*, February 28, 2022, <https://www.ipcc.ch/2022/02/28/pr-wgii-ar6/>.

making sure communities are not split, since this contributes to social isolation and acts as a barrier to belonging.

There is a focus on individual responsibility when it comes to climate change, rather than state-wide protection and measures to mitigate climate change impacts. For instance, the US Federal Emergency Management Agency's guide for disaster preparedness for people with disabilities relies on individual responsibility. According to the guide, "You [people with disabilities] are in the best position to plan for your own safety."²⁴¹ Individuals are responsible for drawing up their own evacuation plans and ensuring their own safety during disasters. While there is some degree of individual responsibility, it should be a coordinated effort alongside the state and federal governments. Governments, industries, groups, organizations, and individuals should do the best they can to ensure climate change occurs at a manageable pace and in a positive direction. People with disabilities and older people, who are currently not included in most climate change action and disaster management plans, should also be included in planning and policies. Merely noting the increased vulnerabilities in these populations is not enough, and the extent to which these populations are disproportionately impacted more than warrants their inclusion in climate change discussions.

²⁴¹ Federal Emergency Management Agency (FEMA), "Preparing for Disaster for People with Disabilities and Other Special Needs," *U.S. Department of Homeland Security & American Red Cross*, August 2004.

2. Heatwaves and Wildfires in Europe

2.1 Climate Change



Figure 4. A firefighter fighting a fire in Louchat, France in July 2022.²⁴²

Europe sits in the northern midlatitudes in what is considered the “temperate zone.”²⁴³ Labeled as such for having mild temperatures, Europe typically has cool to warm summers and cool winters.²⁴⁴ With human-caused climate change, however, temperatures in Europe are on the rise, and heatwaves

²⁴² Thibaud Moritz, “The Heat Across Europe Has Led to Wildfires, Including This One in Louchats, France, in July, Which Have Released Lots of Carbon into the Atmosphere,” photograph, *New Scientist*, August 4, 2022, <https://www.newscientist.com/article/2332298-european-wildfires-have-released-a-record-amount-of-carbon/>.

²⁴³ Met Office, “Climate Zones,” *Met Office*, Accessed 20 August 2022, <https://www.metoffice.gov.uk/weather/climate/climate-explained/climate-zones>.

²⁴⁴ World Book, “European Climate,” *World Book*, 2006, <https://web.archive.org/web/20110723020158/http://www.asparis.net/lowerschool/2dgrade/maps/climate/europe.htm>.

and hotter temperatures are expected to be increasingly common.²⁴⁵ In fact, the authors behind a scientific study published in July 2022 called Europe a “heatwave hotspot,” because the number of heatwaves has increased three to four times faster in Europe than in other regions in the northern midlatitudes.²⁴⁶

Human activity is the main cause for the change in temperatures, with studies showing that temperatures would never have risen to their current levels were it not for human-caused climate change.²⁴⁷ Climate models show that GHG emissions have accelerated the increase in temperatures, and the current rate of warming in Europe has far exceeded predictions from climate models based on existing climate records.²⁴⁸ Simply put, Europe is heating up much faster than it has been in previous years. This, unfortunately, also means that Europe is heating up faster than scientists are able to predict, which comes with dire consequences. It is significant to note that European countries are among the world’s top GHG emitters, making them key drivers of climate change.²⁴⁹

²⁴⁵ Efi Rousi et al., “Accelerated Western European Heatwave Trends Linked to More-Persistent Double Jets Over Eurasia,” *Nature Communications* 13, no. 3851 (July 2022): <https://doi.org/10.1038/s41467-022-31432-y>.

²⁴⁶ Ibid.

²⁴⁷ Georgia Rannard, “UK’s 40C Heatwave ‘Basically Impossible’ Without Climate Change,” *BBC News*, July 29, 2022, <https://www.bbc.co.uk/news/science-environment-62335975>.

²⁴⁸ Helena Horton, “Climate Breakdown Made UK Heatwave 10 Times More Likely, Study Finds,” *The Guardian*, July 28, 2022, <https://www.theguardian.com/world/2022/jul/28/climate-breakdown-made-uk-heatwave-10-times-more-likely-study-finds>.

²⁴⁹ Climate Watch, “Historical GHG Emissions,” Climate Watch, n.d., https://www.climatewatchdata.org/ghg-emissions?end_year=2022®ions=TOP&start_year=1990.

This year's heatwaves were unusually hot and prolonged.²⁵⁰ The summer of 2022 has been Europe's hottest summer yet,²⁵¹ with 21 countries across Europe issuing heat warnings and record temperatures being topped in multiple countries in the second and third weeks of July.²⁵² In the United Kingdom, temperatures reached up to 40.3 degrees Celsius (104.5 degrees Fahrenheit),²⁵³ Spain reached 45 degrees Celsius (113 degrees Celsius),²⁵⁴ France reached 40.5 degrees Celsius (104.9 degrees Fahrenheit),²⁵⁵ Italy reached past 40 degrees Celsius (104 degrees Fahrenheit),²⁵⁶ and Portugal saw a staggering 47 degrees Celsius (116.6 degrees Fahrenheit).²⁵⁷

These unprecedented temperatures put lives at risk,²⁵⁸ with countries and health systems unable to prepare and plan for the heat. As a result, thousands

²⁵⁰ Copernicus, "Copernicus: Prolonged and Intense Heatwave Affecting Parts of Western and Northern Europe Breaks Temperature Records; Globally, July 2022 was One of Three Warmest Julys on Record," *Copernicus*, August 8, 2022, <https://climate.copernicus.eu/copernicus-prolonged-and-intense-heatwave-affecting-parts-western-and-northern-europe-breaks>; Matthew Cappucci and Jason Samenow, "These Maps Show How Excessively Hot it is in Europe and the U.S.," *The Washington Post*, July 18, 2022, <https://www.washingtonpost.com/climate-environment/2022/07/18/heatwave-europe-united-states-records-uk/>.

²⁵¹ Copernicus, "Copernicus: Summer 2022 Europe's Hottest on Record," *Copernicus*, September 8, 2022, <https://climate.copernicus.eu/copernicus-summer-2022-europes-hottest-record>.

²⁵² Sana Noor Haq et al., "Heat Wave Scorches Europe as UK Reaches Record-Breaking Temperatures," *CNN*, July 20, 2022, https://edition.cnn.com/europe/live-news/uk-europe-heatwave-fires-news-071922-intl-gbr/h_aebcef06b7d0c9a28124f2db84bad7a7.

²⁵³ Andre Rhoden-Paul and Doug Falkner, "London Fire Brigade had Busiest Day since World War Two, Says London Mayor," *BBC News*, July 20, 2022, <https://www.bbc.co.uk/news/uk-62232654>.

²⁵⁴ Sam Jones, "Forest Fires Rage Across Europe as Heatwave Sends Temperatures Soaring," *The Guardian*, July 17, 2022, <https://www.theguardian.com/world/2022/jul/17/forest-fires-rage-across-europe-as-heatwave-sends-temperatures-soaring>.

²⁵⁵ Bob Edme and John Leicester, "With Fires Raging in Europe, France Detains Man Over Blaze," *ABC News*, July 19, 2022, <https://abcnews.go.com/International/wireStory/man-detained-police-probe-raging-wildfires-france-87058772>.

²⁵⁶ Lily Waddell, "Heatwave Records are Broken as Wildfires Scorch Europe," *Evening Standard*, July 20, 2022, <https://www.standard.co.uk/news/world/europe-heatwave-record-temperatures-uk-france-italy-greece-fire-b1013464.html>.

²⁵⁷ Sam Jones, "Forest Fires Rage Across Europe as Heatwave Sends Temperatures Soaring," *The Guardian*, July 17, 2022.

²⁵⁸ Matthew Cappucci and Jason Samenow, "These Maps Show How Excessively Hot it is in Europe and the U.S.," *The Washington Post*, July 18, 2022.

are reported to have died in heatwaves in the course of two weeks.²⁵⁹ Spain and Portugal together have reported over 2,600 heat-related deaths, and other European countries are still collecting heat-related data.²⁶⁰ The United Kingdom predicts heat-related deaths to be in the thousands,²⁶¹ possibly up to 10,000.²⁶² These are not including additional deaths that will have occurred during previous heatwaves in May and in the most recent heatwaves seen in August. According to Roop Singh of the Red Cross Red Crescent Climate Centre, “Heatwaves are the deadliest type of extreme weather event in Europe, killing thousands each year.”²⁶³

The unusual heat recorded this year has led to Europe’s worst drought in 500 years, which has led to an increase in wildfires.²⁶⁴ Heatwaves increase the chance of fires, because warmer temperatures cause dry, arid weather conditions and dry up land and vegetation, essentially turning the land into kindling.²⁶⁵ With

²⁵⁹ Esther Kim, “Europe Heatwaves Disastrous for Older People, People with Disabilities: Climate Crisis Needs Effective, Inclusive Heat Planning and Response,” *Human Rights Watch*, August 12, 2022, <https://www.hrw.org/news/2022/08/12/europe-heatwaves-disastrous-older-people-people-disabilities>.

²⁶⁰ Giovanna Coi and Zia Weise, “Excess Deaths Surged as Heat Wave Hit Europe: Preliminary Data Shows Thousands More People Died When Temperatures Soared in July,” *Politico*, August 3, 2022, <https://www.politico.eu/article/excess-death-surged-heat-wave-hit-europe/>.

²⁶¹ Mark Townsend and James Tapper, “Johnson Skips Emergency Cobra Meeting as Experts Warn Thousands May Die in UK Heatwave,” *The Guardian*, July 16, 2022, <https://www.theguardian.com/uk-news/2022/jul/16/johnson-skips-emergency-cobra-meeting-as-experts-warn-thousands-may-die-in-uk-heatwave>.

²⁶² Tim Dodd, “‘Up to 10,000 Excess Heatwave Deaths’ Should be Anticipated - Ex-Govt Chief Scientist,” *Leading Britain’s Conversation (LBC)*, July 16, 2022, <https://www.lbc.co.uk/radio/presenters/matt-frei/excess-deaths-heatwave-uk-weather-national-emergency-temperatures-40c/>.

²⁶³ Helena Horton, “Climate Breakdown Made UK Heatwave 10 Times More Likely, Study Finds,” *The Guardian*, July 28, 2022.

²⁶⁴ Philip Blenkinsop, “Europe Facing its Worst Drought in 500 Years - Study,” *Reuters*, August 23, 2022, <https://www.reuters.com/world/europe/nearly-two-thirds-europe-facing-drought-or-drought-risk-2022-08-23/>.

²⁶⁵ Kate Abnett, “Wildfires in Europe Burn Second-Biggest Area on Record,” *Reuters*, August 4, 2022, <https://www.reuters.com/world/europe/wildfires-europe-burn-second-biggest-area-record-2022-08>

this year's unprecedented heatwaves, Europe's wildfire season this year has been the worst on record.²⁶⁶ The total area of land that has been burned so far is double the average in previous years, even though the wildfire season is still ongoing.²⁶⁷ Throughout Europe, the land area burned is more than double the size of Luxembourg.²⁶⁸ 659,541 hectares (1.6 million acres) of land had been burned by mid-August.²⁶⁹

Italy's wildfires this year are reported to be three times worse than average.²⁷⁰ In the United Kingdom, the London fire brigade received the most number of calls since World War II,²⁷¹ and in Portugal, more than 100 municipalities were put at maximum risk of fires.²⁷² Greece had 71 new fires within a 24-hour period,²⁷³ while Portugal saw 170 new fires in one day.²⁷⁴ Shelters and evacuation centers were set up in France and the United

-04/; Jill E. Hopke, "Connecting Extreme Heat Events to Climate Change; Media Coverage of Heat Waves and Wildfires," *Environmental Communication* 14, no. 4 (November 2019): <https://doi.org/10.1080/17524032.2019.1687537>.

²⁶⁶ Kate Abnett, "Wildfires in Europe Burn Second-Biggest Area on Record," *Reuters*, August 4, 2022.

²⁶⁷ Sana Noor Haq et al., "Heat Wave Scorches Europe as UK Reaches Record-Breaking Temperatures," *CNN*, July 20, 2022.

²⁶⁸ *ibid.*

²⁶⁹ BBC, "Europe Wildfires Burn Area a Fifth of the Size of Belgium," *BBC*, August 16, 2022, <https://www.bbc.co.uk/newsround/62564880#:~:text=Wildfires%20in%20Europe%20have%20burned,since%20records%20began%20in%202006>.

²⁷⁰ The Local it, "Italian Wildfires 'Three Times Worse' Than Average as Heatwave Continues," *The Local it*, June 27, 2022, <https://www.thelocal.it/20220627/heatwave-italian-wildfires-already-three-times-worse-than-average/>.

²⁷¹ Andre Rhoden-Paul and Doug Falkner, "London Fire Brigade had Busiest Day since World War Two, Says London Mayor," *BBC News*, July 20, 2022.

²⁷² Antoaneta Roussi and Eddy Wax, "'Just Hell: 5 Countries Suffering in Europe's Heat Wave: 'Unprecedented' Lethal Weather Starts to Engulf European Nations,'" *Politico*, July 16, 2022, <https://www.politico.eu/article/five-countries-suffering-from-the-heat-wave-in-europe/>.

²⁷³ Guillermo Martinez, "'Climate Change Affects Everyone': Europe Battles Wildfires in Intense Heat," *Reuters*, July 17, 2022, <https://www.reuters.com/business/environment/spain-portugal-battle-wildfires-heatwaves-scorch-southern-europe-2022-07-17/>.

²⁷⁴ Peter Wise and Leslie Hook, "Wildfires Rage Across Portugal as Intense Heatwave Grips Europe," *Financial Times*, July 15, 2022, <https://www.ft.com/content/e9e20237-3007-4e50-8c0f-2aca3cad7735>.

Kingdom.²⁷⁵ Slovenia, Poland, Slovakia, and Bosnia and Herzegovina had to request additional assistance in fighting fires from the EU Civil Protection Mechanism (EUCPM) in July, as country efforts were not enough to fight the fires.²⁷⁶ Tens of thousands of residents across ten countries were evacuated due to fires.²⁷⁷ According to the head of Spain's Civil Protection and Emergencies agency, Leonardo Marcos González, "We are in the midst of the most significant civil protection emergency on record."²⁷⁸

There is a cyclical relationship between extreme heat and wildfires. Not only does heat increase the chance of wildfires, but also, wildfires increase air temperature, which exacerbates heatwaves. Wildfires, in the burning process, also emit carbon. From the wildfires in the first half of 2022 alone, the European Union (EU) Member States and the United Kingdom have emitted record levels

²⁷⁵ Jones, "Forest Fire Rage Across Europe"; Marcus Parekh, Berny Torre, and Josh White, "UK Heatwave: Thunderstorms to Bring Further Rail Chaos on Wednesday," *The Telegraph*, July 19, 2022, <https://www.telegraph.co.uk/news/2022/07/19/heatwave-uk-weather-record-temperature-today-met-office-trains/?curator=upst-ract.com>.

²⁷⁶ European Commission, "EU Solidarity with Slovenia in Combating Wildfires," Press Release, *European Commission*, July 21, 2022, https://ec.europa.eu/commission/presscorner/detail/en/IP_22_4642; Sarajevo Times, "BiH is Seeking International Assistance for Extinguishing of Wildfires," *Sarajevo Times*, July 26, 2022, <https://sarajevotimes.com/bih-is-seeking-international-assistance-for-extinguishing-of-wildfires/>.

²⁷⁷ Angela Charlton and Joseph Wilson, "Fires Scorch Spain and France, Where Flames Reach the Beach," *ABC News*, July 17, 2022, <https://abcnews.go.com/International/wireStory/fires-scorch-france-spain-temperature-related-deaths-soar-86959497>; Bob Edme and John Leicester, "With Fires Raging in Europe, France Detains Man Over Blaze," *ABC News*, July 19, 2022.; Jones, "Forest Fire Rage Across Europe"; Marcus Parekh, Berny Torre, and Josh White, "UK Heatwave: Thunderstorms to Bring Further Rail Chaos on Wednesday," *The Telegraph*, July 19, 2022.; Elsa Maishman, "In Pictures: From Tenerife to Greece, Wildfires Rage in Europe," *BBC News*, July 24, 2022.; Renee Maltezou and Federico Maccioni, "Europe's Heatwave Reaches Poland, Greece as it Moves Eastwards, Brings Wildfires," *Reuters*, July 22, 2022.

²⁷⁸ Bob Edme and John Leicester, "With Fires Raging in Europe, France Detains Man Over Blaze," *ABC News*, July 19, 2022.

of carbon, equaling Croatia's annual emissions.²⁷⁹ This, of course, exacerbates climate change, which will then cause more extreme heatwaves and wildfires.

2.2 Impacts on People with Disabilities and Older People

The disproportionate adverse impact on older people and people with disabilities during heatwaves is striking. During the July heatwaves earlier this year, Portugal's Health Ministry reported that most heat-related deaths were among older populations, and older people with underlying medical conditions were particularly affected.²⁸⁰ Spain's Ministry of Health released information on heat-related deaths by age, and at the time of reporting, 95.6% of those who had died due to the heat were older than 65 years of age.²⁸¹ People with respiratory and cardiovascular diseases were also reported to have higher mortality.²⁸²

Other countries in Europe are still collecting data on heat-related deaths, but past figures indicate that older people have been disproportionately affected. In July 2021, hundreds of people died during a particularly harsh heatwave in Canada, and many were "older individuals living alone in private residences with

²⁷⁹ Adam Vaughan, "European Wildfires Have Released a Record Amount of Carbon," *New Scientist*, August 4, 2022, <https://www.newscientist.com/article/2332298-european-wildfires-have-released-a-record-amount-of-carbon/>.

²⁸⁰ Joseph Ataman et al., "Extreme Heat Sears Parts of Europe, with UK Seeing Third-Hottest Day on Record," *CNN*, July 19, 2022, https://edition.cnn.com/2022/07/18/weather/europe-uk-heatwave-wildfires-france-spain-intl/index.html?utm_medium=social&utm_content=2022-07-18T22%3A03%3A03&utm_source=twCNN&utm_term=link.

²⁸¹ Ani, "Over 1,000 Killed in Spain's Heatwave; Temperature Tops 40 Dec C," *Business Standard*, July 22, 2022, https://www.business-standard.com/article/international/over-1-000-killed-in-spain-s-heatwave-temperature-tops-40-deg-c-122072200117_1.html#:~:text=Spain's%20Ministry%20of%20Health,over%20the%20past%2010%20days.

²⁸² Ibid.

minimal ventilation.”²⁸³ The United Kingdom recorded 1,634 deaths during heatwaves in 2021, of which 90% were among people 65 and older.²⁸⁴ In 2003, France saw its deadliest heatwave, during which most of the 15,000 heat-related deaths were among older people.²⁸⁵

Data on the number of people with disabilities who have died in the July 2022 heatwaves is not yet available, but deaths are likely to be higher in these individuals, since people with certain pre-existing conditions are less able to regulate body temperature.²⁸⁶ For example, people with diabetes,²⁸⁷ spinal cord injuries,²⁸⁸ traumatic brain injuries,²⁸⁹ and cerebral palsy²⁹⁰ are less able to stay cool in heat. Additionally, people with psychosocial disabilities are three times more likely to die due to heat.²⁹¹ During heatwaves in Montreal in 2018, 25% of

²⁸³ Ellen Spannagel, “Record Canada Heat Harms Older People and People with Disabilities,” *Human Rights Watch*, July 9, 2021, <https://www.hrw.org/news/2021/07/09/record-canada-heat-harms-older-people-and-people-disabilities>.

²⁸⁴ UK Health Security Agency (UKHSA), “Research and Analysis: Heat Mortality Monitoring Report: 2021,” *UK Health Security Agency*, May 17, 2022, <https://www.gov.uk/government/publications/heat-mortality-monitoring-reports/heat-mortality-monitoring-report-2021>.

²⁸⁵ CBS News, “Fires Scorch France and Spain as Temperature-Related Deaths Soar in European Heat Waves,” *CBS News*, July 17, 2022, <https://www.cbsnews.com/news/europe-heatwave-france-spain-wildfires/>.

²⁸⁶ Si-Heon Kim, Soo-Nam Jo, Hyung-Nam Myung, and Jae-Yeon Jang, “The Effect of Pre-Existing Medical Conditions on Heat Stroke During Hot Weather in South Korea,” *Environmental Research* 133 (August 2014): 246-252, <https://doi.org/10.1016/j.envres.2014.06.003>.

²⁸⁷ Sydney A. Westphal et al., “Managing Diabetes in the Heat: Potential Issues and Concerns,” *Endocrine Practice* 16, no. 3 (May 2010): 506-511, <https://doi.org/10.4158/EP09344.RA>.

²⁸⁸ John P. Handrakis, Michelle Trbovich, Ellen Merete Hagen, and Michael Price, “Thermoregulation in Persons with Spinal Cord Injury: Case Series on Use of the Automatic Standards,” *Spinal Cord Series and Cases* 3, no. 17086 (December 2017): <https://www.nature.com/articles/s41394-017-0026-7>.

²⁸⁹ Joshua B. Gaither et al., “Environmental Hyperthermia in Prehospital Patients with Major Traumatic Brain Injury,” *The Journal of Emergency Medicine* 49, issue 3 (September 2015): 375-381, <https://doi.org/10.1016/j.jemermed.2015.01.038>.

²⁹⁰ Caroline J. Smith, “Pediatric Thermoregulation: Considerations in the Face of Global Climate Change,” *Nutrients* 11, no. 9 (August 2016): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6770410/>.

²⁹¹ Abderrezak Bouchama et al., “Prognostic Factors in Heat Wave-Related Deaths: A Meta-Analysis,” *Arch Internal Medicine* 167, no. 20 (November 2007): 2170-2176, <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/413470>.

heat-related deaths were people with schizophrenia.²⁹² Some psychiatric medications interfere with the body's ability to regulate temperature, which exacerbates the impacts of heat, but even those not taking these medications have higher chances of mortality.²⁹³

During wildfires, people with disabilities and older people have a more difficult time evacuating and can have difficulty accessing necessary medication and services, sometimes with dire consequences.²⁹⁴ Out of the handful of deaths from the wildfires, many were among older people. In Portugal, a couple in their 80s died while fleeing from the fires,²⁹⁵ and in Spain, a 62-year-old firefighter and a 69-year-old farmer died.²⁹⁶

People with disabilities and older people often take longer when evacuating, and as a result, may have to leave belongings behind. For example, in the United Kingdom, one person with chronic obstructive pulmonary disease (COPD) was forced to evacuate and did not have time to pack his inhaler and medication.²⁹⁷ His wife shared that his condition was “not very good” because of

²⁹² Ellen Spannagel, “Record Canada Heat Harms Older People and People with Disabilities,” *Human Rights Watch*, July 9, 2021.

²⁹³ Penelope J.S. Stein and Michael Ashley Stein, “Climate Change and the Right to Health of People with Disabilities,” *The Lancet: Global Health* 10, issue 1 (December 2021): E24-E25..

²⁹⁴ Haley Hostetter and M.Z. Naser, “Characterizing Disability in Fire Evacuation: A Progressive Review,” *Journal of Building Engineering* 53, no. 104573 (August 2022):

<https://doi.org/10.1016/j.jobbe.2022.104573>; Marcus Runefors, Anders Jonsson, and Carl Bonander, “Factors Contributing to Survival and Evacuation in Residential Fires Involving Older Adults in Sweden,” *Fire Safety Journal* 122, no. 103354 (June 2021): <https://doi.org/10.1016/j.firesaf.2021.103354>.

²⁹⁵ Bob Edme and John Leicester, “With Fires Raging in Europe, France Detains Man Over Blaze,” *ABC News*, July 19, 2022.

²⁹⁶ Haq et al., “Heat Wave Scorches Europe”; Sam Jones, “‘This is a Warning’: Spain Reels from Devastating Blazes and Heatwaves,” *The Guardian*, July 22, 2022.

²⁹⁷ Sky News, “Major Incident Declared Across London After ‘Huge Surge’ in Fires and Homes Destroyed on UK’s Hottest-Ever Day,” *Sky News*, July 20, 2022, <https://news.sky.com/story/major-incident-declared-across-london-after-huge-surge-in-fires-and-homes-destroyed-on-uks-hottest-ever-day-12655061>.

the fires.²⁹⁸ In another instance in the United Kingdom, a 70-year-old woman, Janet Hickey, had to leave her pancreatic cancer medication behind as she fled from her burning home.²⁹⁹ Her husband, 71-year-old Patrick Hickey, told reporters, “We had to leave everything behind.”³⁰⁰ In Lesbos, Greece, “some elderly residents could only pack a few plastic bags with belongings before leaving on a bus” while younger residents were able to pack more of their belongings.³⁰¹ Because wildfires spread quickly and evacuation could be at short notice, people with disabilities and older people are disproportionately impacted during fires, in both loss of assets and loss of life.

2.3 Laws, Policies, and Government Response

Despite heatwaves, extreme heat, and subsequent wildfires becoming more commonplace across Europe, European governments have largely failed to protect at-risk populations, like older people and people with disabilities, from the impacts of global warming.³⁰² Some countries, such as Germany, have no existing heat action plan, let alone ones that target people with disabilities and older people specifically.³⁰³ While countries like Belgium and France do have heat action plans that mention people with disabilities and older people,³⁰⁴ most

²⁹⁸ Ibid.

²⁹⁹ Marcus Parekh, Berny Torre, and Josh White, “UK Heatwave: Thunderstorms to Bring Further Rail Chaos on Wednesday,” *The Telegraph*, July 19, 2022.

³⁰⁰ Ibid.

³⁰¹ Elsa Maishman, “In Pictures: From Tenerife to Greece, Wildfires Rage in Europe,” *BBC News*, July 24, 2022.

³⁰² Karl Mathiesen, Zia Weise, and Pieter Haeck, “Europe’s Not Ready for a Hotter World,” *Politico*, July 24, 2022, <https://www.politico.eu/article/europe-climate-change-global-warming-heat-wave-adaptation/>.

³⁰³ Ibid.

³⁰⁴ CBS News, “Fires Scorch Spain and France”; City of Brussels, “Heat Wave Plan,” *City of Brussels*, May 17, 2022, <https://www.brussels.be/heat-wave-plan>.

European countries have inadequate plans,³⁰⁵ which leads to thousands of deaths each year. According to Singh, “Many of these deaths are preventable if adequate adaptation plans are in place. Without rapid and comprehensive adaptation and emission cuts, the situation will only get worse.”³⁰⁶ The World Health Organization’s (WHO) Regional Director for Europe, Hans Kluge, even described the recent thousands of deaths seen in July’s heatwaves this year as “needless deaths” for the same reason.³⁰⁷

European governments largely approach heatwaves from a point of individual responsibility. Some countries do have heat action plans, but many of them are ineffective. A study published in 2021 found that European national heat health action plans (NHHAPs) exist, but in practice, roles and responsibilities are “vague and ambiguous.”³⁰⁸ Warning systems are the primary element of NHHAPs, which are typically well-defined and implemented, but these place responsibility on individuals.³⁰⁹

Many heat warnings issued across various European countries ask residents to be aware of how to keep themselves cool during heatwaves, and many specifically mention people with disabilities and older people as being more

³⁰⁵ Karl Mathiesen, Zia Weise, and Pieter Haeck, “Europe’s Not Ready for a Hotter World,” *Politico*, July 24, 2022.

³⁰⁶ Helena Horton, “Climate Breakdown Made UK Heatwave 10 Times More Likely, Study Finds,” *The Guardian*, July 28, 2022

³⁰⁷ Hans Henri P. Kluge, “Heatwave in Europe: Local Resilience Saves Lives - Global Collaboration Will Save Humanity: Statement by WHO Regional Director for Europe, Dr Hans Henri P. Kluge,” *World Health Organization (WHO)*, July 22, 2022, <https://www.who.int/europe/news/ite/22-07-2022-heatwave-in-europe--local-resilience-saves-lives---global-collaboration-will-save-humanity>.

³⁰⁸ Kirsten Vanderplanken et al., “Governing heatwaves in Europe: Comparing Health Policy and Practices to Better Understand Roles, Responsibilities and Collaboration,” *Health Research Policy and Systems* 19, no. 20 (February 2021): 1, <https://health-policy-systems.biomedcentral.com/articles/10.1186/s12961-020-00645-2>.

³⁰⁹ Ibid.

vulnerable to heat. While these usually only briefly identify vulnerable populations, other countries ask individuals to check in on more at-risk individuals. In the United Kingdom, the Cabinet Office minister, Kit Malthouse, alerted residents: “We are asking people if they have an elderly neighbour, particularly if they live alone, it would be a neighbourly thing to check up on them and make sure they are looking after themselves and have access to water.”³¹⁰ The Heatwave Plan for England urges people to be alert “and call a doctor or social services if someone is unwell or further help is needed.”³¹¹ Similar warnings that asked individuals to check in on at-risk populations like older people were issued in other countries.³¹² These were not always accessible in format, and many were published on websites, to which some older people may not have access.

In Belgium, the Mayor of Brussels, Philippe Close, announced, “Every citizen can show solidarity with our elderly: a phone call, a ring of the bell, a report to our services are valuable gestures to ensure the health of our elderly and to fight against isolation.”³¹³ This was in conjunction with Brussels’ comprehensive heat action plan, which includes community centers contacting registered residents when temperatures exceed 29 degrees Celsius (84.2

³¹⁰ Nicola Davis, “UK Heatwave: How to Keep Cool and Stay Safe in 40C,” *The Guardian*, July 17, 2022, <https://www.theguardian.com/uk-news/2022/jul/17/uk-heatwave-how-to-keep-cool-and-stay-safe-in-40c>.

³¹¹ Ibid.

³¹² Constant Méheut and Aurelien Breeden, “Firefighters Battle an ‘Explosive Cocktail’ of Wind and Flames in Southwestern France,” *The New York Times*, July 19, 2022, <https://www.nytimes.com/2022/07/19/world/europe/france-wildfires.html>; Marta Mize, “European Heatwave to Engulf Belgium in Next Few Weeks,” *The Brussels Times*, July 12, 2022, <https://www.brusselstimes.com/253889/another-heatwave-en-route-to-belgium>.

³¹³ Maïthé Chini, “Belgium in Brief: Bringing the Heat,” *The Brussels Times*, July 13, 2022, <https://www.brusselstimes.com/254491/belgium-in-brief-bringing-the-heat>.

degrees Fahrenheit), distributing jars and flasks, and checking living conditions of registered people.³¹⁴ While individual responsibility is part of Belgium's heat action plan, this makes up for the gap in community responses that are drawn up in the heat action plan that do not rely on individual responsibility.

Another issue is that most European countries do not have legal maximum working temperatures despite having legal minimum working temperatures.³¹⁵ France saw 12 workers die due to heat in 2020,³¹⁶ and Spain had two older people die of heatstroke in Madrid this July.³¹⁷ The United Kingdom also does not have legal maximum working temperatures,³¹⁸ but other countries, including Belgium, Hungary, and Latvia, have maximum working temperatures in place.³¹⁹

July's heatwaves prompted unusual requests from members of European governments in an effort to deal with the heat. Spain's Prime Minister, Pedro Sanchez, asked workers to not wear neckties, while in the United Kingdom, politicians in the House of Commons were told to not wear their suit jackets.³²⁰ In an effort to conserve energy, Spain, Italy, and Germany have urged residents not

³¹⁴ City of Brussels, "Heat Wave Plan," *City of Brussels*, May 17, 2022.

³¹⁵ Channel News Asia, "Call for Maximum Working Temperatures Cap After EU Heatwave Deaths," *China News Asia*, July 25, 2022, <https://www.channelnewsasia.com/business/call-maximum-working-temperature-cap-after-eu-heatwave-deaths-2832921>; Mika Minio-Paluello, "We've Reached Boiling Point - Nobody Should Have to Work in Temperatures Above 30C," *The Guardian*, July 19, 2022, <https://www.theguardian.com/commentisfree/2022/jul/19/heat-deadly-workers-uk-no-maximum-workplace-temperature>.

³¹⁶ Channel News Asia, "Call for Maximum Working Temperatures Cap After EU Heatwave Deaths," *China News Asia*, July 25, 2022.

³¹⁷ Ibid.; Sam Jones, "Forest Fires Rage Across Europe as Heatwave Sends Temperatures Soaring," *The Guardian*, July 17, 2022.

³¹⁸ Mika Minio-Paluello, "We've Reached Boiling Point - Nobody Should Have to Work in Temperatures Above 30C," *The Guardian*, July 19, 2022.

³¹⁹ Channel News Asia, "Call for Maximum Working Temperatures Cap After EU Heatwave Deaths," *China News Asia*, July 25, 2022.

³²⁰ Malu Cursino, "Spain Heatwave: PM Tells Workers to Stop Wearing Ties to Save Energy," *BBC News*, July 29, 2022, <https://www.bbc.co.uk/news/world-europe-62350019>.

to use air conditioning, with some countries like Spain and Italy designating a certain temperature at which air conditioning can be used.³²¹

Other more viable solutions are not being implemented. Scientists from the Autonomous University of Barcelona (UAB) found that painting Barcelona's rooftops white can lower temperatures by up to five degrees Celsius.³²² This low-cost strategy was found to be more effective than increasing green space, which is the city's current method of combating the rising temperatures.³²³

Spain has also started naming heatwaves (in a similar fashion to hurricanes), so the public will take hot temperatures more seriously and start viewing extreme temperatures as potentially dangerous.³²⁴ Scientists gave a heatwave a name for the first time earlier this year.³²⁵ The heatwave in Seville from July 24 to July 27 of 2022 was given the name "Zoe."³²⁶ Spain plans to continue this naming, alternating between female and male names in reverse alphabetical order.³²⁷

³²¹ Cursino, "Spain Heatwave"; Angela Giuffrida, "Italy Puts 25C Limit on Air Conditioning as Ukraine Crisis Forces Energy Rationing," *The Guardian*, April 21, 2022, <https://www.theguardian.com/world/2022/apr/20/operation-thermostat-italy-limits-air-conditioning-amid-energy-crisis-fears>; Philip Oltermann, "German Cities Impose Cold Showers and Turn Off Lights Amid Russian Gas Crisis," *The Guardian*, July 28, 2022, <https://www.theguardian.com/world/2022/jul/28/german-cities-impose-cold-showers-and-turn-off-fountains-in-face-of-russian-gas-crisis>.

³²² Ben Anthony Horton, "Painting Barcelona's Rooftops Could Lower Temperatures By Up to Five Degrees, Say Experts," *EuroNews.Green*, January 11, 2022, <https://www.euronews.com/green/2022/01/11/painting-barcelona-s-rooftops-could-lower-temperatures-by-up-to-five-degrees-say-experts>.

³²³ Ibid.

³²⁴ Stephanie Pappas, "For the First Time, Scientists Have Named a Heat Wave," *Live Science*, August 28, 2022, <https://www.livescience.com/first-named-heat-wave>.

³²⁵ Ibid.

³²⁶ Ibid.

³²⁷ Ibid.

2.4 Recommendations

Governments and the public need to take extreme heat seriously. Governments should recognize that heat can and will cause deaths, but measures can be put in place and planning done ahead of hot weather events to protect residents. The United Kingdom's Meteorological Office has estimated that by 2035, temperatures seen in 2022's "unprecedented" extreme temperatures will be average summer temperatures.³²⁸ With thousands predicted to have died in this year's heatwaves and a record of thousands of people dying in previous years, European countries simply cannot afford to not address the challenges that come with heat more deliberately. Since most of these deaths are among older populations, as well as people with underlying medical and psychiatric conditions, it is essential to pay special attention to these populations in heat action plans, policies, and practices. Inadequate planning, and specifically planning that does not specifically target people with disabilities and older people, will mean thousands of people will continue to die preventable deaths. Governments need to have heat action plans, and where plans do exist, they must be updated and improved so they are more effective.

Europe requires a different approach to tackling heat than is currently in place. The current policies and action plans, especially heat warning systems, focus on individual responsibility rather than state responsibility, but this has been proven to be ineffective. The current system assumes and relies on

³²⁸ Amarachi Orie and Angela Dewan, "Record-Breaking Heat Wave in Europe Will Be the Norm by 2035, Analysis Shows," *CNN*, August 25, 2022, <https://edition.cnn.com/2022/08/25/europe/record-heat-climate-analysis-summer-2035-intl-scli/index.html>.

populations vulnerable to the heat having the social connections to be protected during times of extreme heat, but many at-risk populations do not have robust social connections that are able to act as protective mechanisms. During Canada's 2021 heatwave, from June 25 to July 1, many of the 719 people who died were "older individuals living alone in private residences with minimal ventilation."³²⁹ Relying on individual residents' responsibility means that people without adequate social networks need people to "check in" on them during heatwaves, as advised by governments, or otherwise will fall through the cracks in the system. Either efforts to increase the social connectedness of at-risk populations like people with disabilities and older people need to take place, or there needs to be a shift from individual responsibility to state responsibility. Ideally, both should take place simultaneously. Belgium's heat plans of alerting at-risk populations, but also asking residents to foster better social connections to alert people who are socially isolated, is a good example of how countries can do both.

Data on heat-related illnesses and deaths, as well as wildfire injuries and deaths, are typically disaggregated by age, but governments and research agencies need to ensure that data is also disaggregated by disability as well. Since the evidence for the disproportionate impacts of climate events on people with disabilities has been established, better data collection needs to be carried out in order to assess how people with disabilities are particularly impacted by

³²⁹ Ellen Spannagel, "Record Canada Heat Harms Older People and People with Disabilities," *Human Rights Watch*, July 9, 2021.

heat and fires, so planning can address additional needs required by people with disabilities.

As the “temperate” zone, much of Europe has not had to contend with deadly temperatures, and as a consequence, many people do not view heat as potentially dangerous. According to Martin Herrmann of the Alliance for Climate Protection and Health, “We don’t yet have that societal reflex, to recognize the danger of heat.”³³⁰ This can result in dangerous outcomes, since people will be more likely to engage in behaviors that can lead to heatstroke, unaware of symptoms of overheating, and be less likely to seek medical care for heat-related illnesses. Fostering public awareness and making heat warning systems accessible to all populations aid in ensuring that the public views extreme heat as potentially dangerous. Naming heatwaves is one way of doing this, as is happening in Spain, but additional solutions should be drawn up to shift public attitudes towards heat.

As wildfires become more common, with the increase in temperatures and associated dryness, evacuation systems should pay particular attention to people with disabilities and older people who may need more time to evacuate or gather their belongings, which include life-supporting medication and equipment. Planning is one way to do this. Not only should evacuation alerts and information on wildfires be in accessible formats, but similar to how at-risk populations can be alerted of extreme heat, efforts to ensure that at-risk populations are aware of fires and evacuations should be made. Alerting people of potential fires as early

³³⁰ Karl Mathiesen, Zia Weise, and Pieter Haeck, “Europe’s Not Ready for a Hotter World,” *Político*, July 24, 2022.

as possible is also essential so that people can be prepared to leave should the risk of fire become more imminent.

2.5 Conclusion

Europe's climate is changing at a rate that far exceeds predictions. Laws, policies, and plans have not been adequately addressing these changes, which has unfortunately led to the deaths of thousands of people. If governments do not make more efforts to adapt to the change quickly, more lives will be at risk. Since Europe is one of the world's top GHG emitters, efforts do not just include anticipatory and reactionary planning, but also wider efforts to reduce GHG emissions.

IMPACT

The recommendations in this report can be put into action by governments, research and advocacy organizations like the Samuel Centre for Social Connectedness (SCSC), and key climate change stakeholders. Governments can evaluate and amend existing laws and policies to make sure that they are inclusive of people with disabilities and older people. Many policies and plans inherently exclude people with disabilities and older people, and efforts to include them read like an afterthought that does not provide real support to these communities. Considering the needs and perspectives of people with disabilities and older people from the start of planning and policy-making is an opportunity to ensure that the framework itself is inclusive. Issues like climate displacement are relatively recent, which means this is an opportune time to make sure displacement plans and future laws and policies on displacement are

inclusive of people with disabilities and older people from the start. If no plans or policies exist, governments should develop climate-centered policies and plans that are inclusive of people with disabilities and older people.

Governments can also protect people most vulnerable to the impacts of climate change through funding allocation. Governments should ensure enough funds are made available to protect and relocate those most susceptible to climate change, such as those at risk of displacement. When relocation is the best option, timely relocation should be prioritized so that communities can be kept together, alongside adequate services provided throughout the relocation process.

Organizations like SCSC can support further research on how people with disabilities and older people are impacted by climate change. Some specialized research on specific climate events exists, such as how Hurricane Katrina impacted people with disabilities and older people, but the overall availability of literature is lacking. Not much research has been done specifically on these populations, and data collection on people with disabilities in general is not well-recorded. In identifying the demographics of people being impacted by climate displacement in the United States and heatwaves in Europe, data is often disaggregated by age but not disability, making it difficult to assess the exact impacts on people with disabilities. Data should be collected more robustly and comprehensively to ensure populations are better supported.

Research on how climate change impacts people with disabilities and older people in developing countries is especially lacking. For example, this year,

from May 17 to June 28, northeastern Bangladesh had its worst and deadliest flood.³³¹ More than 100 people died, and more than 7.2 million people were displaced.³³² Bangladesh is one of the most climate-vulnerable countries in the world,³³³ with around 75% of the country lying below sea level.³³⁴ Because of floods, cyclones, and monsoons, people in Bangladesh are constantly at risk of losing their homes and belongings.³³⁵ People with disabilities and older people are likely to be more adversely affected by floods, based on evidence from similar events, such as how floods impact communities in Louisiana in the United States.³³⁶ Current knowledge on how they are impacted, however, is largely unknown.

One study from October 2021 found that early warning systems in flood-prone areas in Bangladesh are not fully inclusive.³³⁷ Another study published in February 2022 researched how floods in 2021 impacted people with

³³¹ Shadhan Kumar Das, “The Worst Flood in the Region in the Last 122 Years,” *International Politics and Society (IPS)*, July 5, 2022, <https://www.ips-journal.eu/interviews/the-worst-flood-in-the-region-in-the-last-122-years-6044/>.

³³² Ians, “Over 100 Dead as Flood Continues to Wreak Havoc in Bangladesh: Report,” *Business Standard*, July 4, 2022, https://www.business-standard.com/article/international/over-100-dead-as-flood-continues-to-wreak-havoc-in-bangladesh-report-122070400036_1.html.

³³³ Human Rights Watch (HRW), “Marry Before Your House is Swept Away: Child Marriage in Bangladesh,” *Human Rights Watch*, June 9, 2015, <https://www.hrw.org/report/2015/06/09/marry-your-house-swept-away/child-marriage-bangladesh>.

³³⁴ Olivia Giovetti, “With Nearly 75% of Bangladesh Underwater, Is the Country Facing a Humanitarian Crisis?,” *Concern Worldwide USA*, July 1, 2021, <https://www.concernusa.org/story/bangladesh-underwater-humanitarian-crisis/>.

³³⁵ Human Rights Watch (HRW), “Marry Before Your House is Swept Away: Child Marriage in Bangladesh,” *Human Rights Watch*, June 9, 2015.

³³⁶ Danielle Maltais, “Elderly People with Disabilities and Natural Disasters: Vulnerability of Seniors and Post Trauma,” *HSOA Journal of Gerontology & Geriatric Medicine*, 5, no. 41 (December 2019): https://www.heraldopenaccess.us/article_pdf/36/elderly-people-with-disabilities-and-natural-disasters-vulnerability-of-seniors-and-post-trauma.pdf.

³³⁷ Musabber Ali Chisty et al., “Disability Inclusiveness of Early Warning System: A Study on Flood-Prone Areas of Bangladesh,” *Disaster Prevention and Management* 30, no. 4/5 (October 2021): 494-509, <https://doi.org/10.1108/DPM-05-2021-0177>.

disabilities in Bangladesh, finding that “households take the disability issues as very common phenomenon, they never thought that they should give special attention to the requirements of persons with disability during disaster or normal time.”³³⁸ That is, people with disabilities are simply not considered in discussions of climate change. Besides these studies, not much else is known about how flooding impacts both people with disabilities and older people. As the 2022 study found, minimal, if any attention seems to be given to these communities, even though the disproportionate impacts on them are well-known.

Further studies of climate change impacts on people with disabilities and older people in developing countries are essential to knowing how to best equip and prepare the most vulnerable populations in times of crisis. Developing countries are usually the lowest emitters of GHGs, but are being impacted first and most severely.³³⁹ As such, more attention should be paid to the impacts in the Global South.

This disregard for people with disabilities and older people in climate talks is not isolated to climate events in developing countries like floods in Bangladesh. COP26 was the least accessible COP to date, because the accessibility assessment was done too late, preventing people with disabilities

³³⁸ Naim Mostofa, “Disability and Disaster: Persons with Disability in a Flood Prone Area of Bangladesh,” *SSRN* (February 2022): 5, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4025458.

³³⁹ United Nations Conference on Trade and Development (UNCTAD), “Smallest Footprints, Largest Impacts: Least Developed Countries Need a Just Sustainable Transition,” *UNCTAD*, October 1, 2021, <https://unctad.org/topic/least-developed-countries/chart-october-2021>.

from attending.³⁴⁰ Additionally, discussions on climate change largely did not mention people with disabilities.³⁴¹

Much like how people with disabilities were an afterthought in planning COP26, the current approach to climate change is to learn about how climate change is impacting the general population first, and then to possibly consider how they impact older people and people with disabilities. With the mounting and shocking evidence for the disproportionate impacts of climate change on people with disabilities and older people, however, these populations should not be an afterthought. Rather, they should be included in all processes of climate discussions from the start of the process. Not including them early enough in the process has a significant impact on their lives and livelihoods. Similarly to how Indigenous communities, as one of the most adversely climate impacted populations, are now part of larger conversations on climate change, people with disabilities and older people should be included in climate change discussions, since they too face more adverse climate change impacts compared to other populations. Climate change experts, organizations, researchers, and key actors should ensure climate discourse and ensuing action is inclusive.

CONCLUSION: FORCED TO WAIT

Climate change itself is not inherently good nor bad. The climate has been changing far before human existence,³⁴² and some variability in climate is

³⁴⁰ Leanne McNulty, "Disability Rights is a Climate Justice Issue. Here's Why," *Green is the New Black*, January 25, 2022.

³⁴¹ *ibid.*

³⁴² Katie Pavid, "Climate Catastrophe Has Happened Before - And It's Teaching Us About the Future," *Natural History Museum*, June 10, 2019, <https://www.nhm.ac.uk/discover/news/2019/june/climate-catastrophe-has-happened-before.html>.

inevitable and natural.³⁴³ The issue is that human activity has accelerated the rate of climate change to a level that is unsustainable and dangerous.³⁴⁴ Further, despite this rapid acceleration, populations that are more vulnerable to adverse impacts from the impacts of climate change, such as people with disabilities and older people, have not been protected. Governments have not responded quickly enough to mitigate human activity that has led to dangerous climate change in the first place, and have not responded quickly enough to protect populations most impacted by it.

This is not to say that there has been a complete lack of action to combat dangerous rates of climate change. There has been some progress in both reducing the rate of climate change and improving climate change response, planning, and protection. The European Union, for example, has made significant progress in decreasing its GHG emissions, but efforts will have to be escalated to continue on this trajectory following the Russian-Ukrainian war that has intensified with the invasion of Ukraine in February 2022.³⁴⁵ The war has so far negatively impacted the environment, with scientists calling it an “environmental disaster,”³⁴⁶ both due to warfare activity and countries attempting to reduce reliance on Russian gas by investing in new sources of fossil fuels.³⁴⁷ Without quick action, the increase in GHG emissions could “lock the world into

³⁴³ Melissa Denchak and Jeff Turrentine, “What is Climate Change?”, *Natural Resources Defense Council (NRDC)*, September 1, 2021.

³⁴⁴ *Ibid.*

³⁴⁵ European Environment Agency (EEA), “Is Europe Reducing its Greenhouse Gas Emissions?”, *EEA*, June 22, 2022, <https://www.eea.europa.eu/themes/climate/eu-greenhouse-gas-inventory>.

³⁴⁶ Paulo Pereria, Ferdo Bašić, Igor Bogunovic, and Damia Barcelo, “Russian-Ukrainian War Impacts the Total Environment,” *Science of The Total Environment* 837, no. 155865 (September 2022): <https://doi.org/10.1016/j.scitotenv.2022.155865>.

³⁴⁷ Jonah Fisher, “Climate Change: Ukraine War Prompts Fossil Fuel ‘Gold Rush’ - Report,” *BBC News*, June 8, 2022, <https://www.bbc.com/news/science-environment-61723252>.

irreversible warming.”³⁴⁸ Recent GHG emissions from wildfires across Europe caused by human-induced climate change will also pose another challenge, as discussed earlier in this report. Governments will need to act quickly, and with substantive enough measures, to ensure that global warming can remain at manageable levels and that vulnerable populations can be protected throughout these increases in carbon emissions. This is not only for countries in the EU, but all countries.

According to climate reporters Brad Plumer and Nadja Popovich, “many net zero goals remain largely aspirational, and most governments have not yet laid out credible plans for achieving them.”³⁴⁹ Dr. Niklas Höhne, a climatologist with NewClimate Institute, furthers, “none of the countries that have pledged to go to zero have sufficient short-term policies to really put themselves on track.”³⁵⁰ There needs to be more deliberate effort from all countries to reduce GHG emissions so that collectively, total GHG emissions can be reduced.

In addition to reducing GHG emissions overall, governments cannot afford to exclude people with disabilities and older people in climate planning and action plans. The lack of inclusion is alarming, especially when considering the amount of evidence on the disproportionate adverse impacts of climate change on people with disabilities and older people. With climate change set to continue at rates

³⁴⁸ Climate Action Tracker, “Global Reaction to Energy Crisis Risks Zero Carbon Transition: Analysis of Government Response to Russia’s Invasion of Ukraine,” *New Climate Institute & Climate Analytics*, June 2022, https://climateactiontracker.org/documents/1055/CAT_2022-06-08_Briefing_EnergyCrisisReaction.pdf.

³⁴⁹ Brad Plumer and Nadja Popovich, “Yes, There Has Been Progress on Climate. No, It’s Not Nearly Enough,” *The New York Times*, October 25, 2021, <https://www.nytimes.com/interactive/2021/10/25/climate/world-climate-pledges-cop26.html>.

³⁵⁰ Ibid.

faster than previously predicted, governments cannot wait any longer to address and mitigate the adverse impacts on these populations.

Inaction has already forced people with disabilities and older people with no other option than simply wait to be rescued. Laws, policies, and action plans are drafted without considering these communities, leaving them outside systems of warning, evacuations, rescues, and recoveries during times of emergencies. The result is that people with disabilities and older people are unable to act quickly ahead of and during climate emergencies, and consequently have to depend on rescue efforts to aid them, which may take hours when rescue plans are not accessible. In less urgent climate situations, such as heatwaves, government response has been to rely on non-vulnerable populations to check in on vulnerable populations, to ensure these populations are informed and kept safe. Simply put, people with disabilities and older people are forced to wait to be rescued in both urgent and non-urgent climate emergencies. In too many cases, rescue plans and efforts have not been inclusive, which has led to prolonged waiting, which, in turn, has frequently resulted in death.

The current climate response framework strips people with disabilities and older people of their agency. They are too often assumed to need assistance and help rather than taking action to protect themselves, and are consequently relegated to passive roles in the quickly developing arena of climate change planning and response. The exclusion of people with disabilities and older people, however, has ultimately made them victims and casualties of climate change, not because they are unable to adapt to the changing climate, but

because they are left out of climate action planning and action. To protect the lives of thousands, people with disabilities and older people should be able to exercise their right to be active actors in climate discussions and plans, especially given they are among the most vulnerable to climate change.

Current climate change response forces people with disabilities and older people to wait. They have been waiting for governments to take climate change seriously and take effective action to mitigate it. They have been waiting for laws and policies, including planning, to be inclusive and protect their livelihoods from climate change. They have been waiting to be rescued during climate disasters and emergencies in a system that allocates them to passive roles, and too often the result of waiting is death. **Immediate inclusion, immediate plans, immediate implementation, and immediate action needs to take place to ensure people with disabilities and older people are not merely forced to wait, but are fully supported and represented in the climate change sphere.**

BIBLIOGRAPHY

- Abnett, Kate. "Wildfires in Europe Burn Second-Biggest Area on Record." *Reuters*, August 4, 2022.
<https://www.reuters.com/world/europe/wildfires-europe-burn-second-biggest-area-record-2022-08-04/>.
- After the Ice*. Episode 2, "Our Land." Directed by Eli Kintisch. Aired October 15, 2020 on PBS Terra. <https://www.pbs.org/video/our-land-01nv3e/>.
- After the Ice*. Episode 3, "Our Story." Directed by Eli Kintisch. Aired October 15, 2020 on PBS Terra. <https://www.pbs.org/video/our-story-a5nva0/>.
- Alaska News. "Al Jazeera Documentary Tells Tale of Two Eroding Alaska Villages." *Anchorage Daily News*, December 18, 2015.
<https://www.adn.com/environment/article/eroding-villages-subject-al-jazeera-documentary/2015/12/18>.
- Ani. "Over 1,000 Killed in Spain's Heatwave; Temperature Tops 40 Dec C." *Business Standard*, July 22, 2022.
https://www.business-standard.com/article/international/over-1-000-killed-in-spain-s-heatwave-temperature-tops-40-deg-c-122072200117_1.html#:~:text=Spain's%20Ministry%20of%20Health,over%20the%20past%2010%20days.
- Associated Press (AP). "Alaska Officials Complete State-Level Climate Policy Draft." *The Seattle Times*, May 20, 2018.
<https://www.seattletimes.com/nation-world/alaska-officials-complete-state-level-climate-policy-draft/>.
- AP News. "Pro-Oil Alaska Governor Also Backs Renewable Energy Ideas." *AP News*, September 23, 2020.
<https://apnews.com/article/climate-climate-change-anchorage-alaska-archive-0516a343c522ec1b1912a4f1c119ae37>.
- Arnold, Elizabeth. "Tale of Two Alaskan Villages." *National Public Radio (NPR)*, July 29, 2008.
<https://www.npr.org/templates/story/story.php?storyId=93029431&t=1656366236953>.
- Ataman, Joseph, Jimmy Hutcheon, Xiaofei Xu, Zahid Mahmood, Sana Noor Haq, and Jorge Engels. "Extreme Heat Sears Parts of Europe, with UK Seeing Third-Hottest Day on Record." *CNN*, July 19, 2022.
https://edition.cnn.com/2022/07/18/weather/europe-uk-heatwave-wildfires-france-spain-intl/index.html?utm_medium=social&utm_content=2022-07-18T22%3A03%3A03&utm_source=twCNN&utm_term=link.
- Bastasch, Michael. "Media Outlets Discover 'America's First Climate Refugees' - for the 3rd Time in 3 Years." *Daily Caller News Foundation*, May 3, 2016.

- <https://dailycaller.com/2016/05/03/media-outlets-discover-americas-first-climate-refugees-for-the-3rd-time-3-years/>.
- Brisman, Avi. "Representing the 'Invisible Crime' of Climate Change in an Age of Post-Truth." *Theoretical Criminology* 22, issue 3 (August 2018): <https://doi.org/10.1177/1362480618787>.
- British Broadcasting Corporation (BBC). "Europe Wildfires Burn Area a Fifth of the Size of Belgium." *BBC*, August 16, 2022. <https://www.bbc.co.uk/newsround/62564880#:~:text=Wildfires%20in%20Europe%20have%20burned,since%20records%20began%20in%202006>.
- Blenkinsop, Philip. "Europe Facing its Worst Drought in 500 Years - Study." *Reuters*, August 23, 2022. <https://www.reuters.com/world/europe/nearly-two-thirds-europe-facing-drought-or-drought-risk-2022-08-23/>.
- Bouchama, Abderrezak, Mohammed Dehbi, Gamal Mohamed, Franziska Matthies, Mohamed Shoukri, and Bettina Menne. "Prognostic Factors in Heat Wave-Related Deaths: A Meta-Analysis." *Arch Internal Medicine* 167, no. 20 (November 2007): 2170-2176. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/413470>.
- Brooks, Brad. "A Climate Change Challenge in Louisiana: Escape the Danger While Retaining Community." *Reuters*, April 22, 2021. <https://www.reuters.com/business/sustainable-business/climate-change-challenge-louisiana-escape-danger-while-retaining-community-2021-04-22/>.
- Buchanan, Maya K. Scott Kulp, and Benjamin Strauss. "Resilience of U.S. Coastal Wetlands to Accelerating Sea Level Rise." *Environmental Research Communications* 4, no. 6 (June 2022): <https://iopscience.iop.org/article/10.1088/2515-7620/ac6eef>.
- Cappucci, Matthew and Jason Samenow. "These Maps Show How Excessively Hot it is in Europe and the U.S.." *The Washington Post*, July 18, 2022. <https://www.washingtonpost.com/climate-environment/2022/07/18/heatwave-europe-unitedstates-records-uk/>.
- Casey-Lockyer, Mary, Rebecca Heick, Caitlin E. Mertzluft, Ellen E. Yard, Amy Wolkin, Rebecca S. Noe, and Michelle Murti. "Deaths Associated with Hurricane Sandy - October-November 2012." *Morbidity and Mortality Weekly Report* 62 (May 2013): 393-39. https://www.researchgate.net/publication/282254463_Deaths_Associated_with_Hurricane_Sandy_-_October-November_2012.

- Columbia Broadcasting System, Inc. (CBS) News. "Fires Scorch France and Spain as Temperature-Related Deaths Soar in European Heat Waves." *CBS News*, July 17, 2022. <https://www.cbsnews.com/news/europe-heatwave-france-spain-wildfires/>.
- CBS News. "Fires Scorch Spain and France"; City of Brussels, "Heat Wave Plan." *City of Brussels*, May 17, 2022. <https://www.brussels.be/heat-wave-plan>.
- Centers for Disease Control and Prevention (CDC). "CDC's Disaster Planning Goal"; John Bel Edwards, "Climate Initiatives Task Force." *Office of the Governor*, Accessed June 16, 2022. <https://gov.louisiana.gov/page/climate-initiatives-task-force>.
- CDC. "Disability and Health Promotion: Disability & Health Emergency Preparedness." *CDC*, September 15, 2020. <https://www.cdc.gov/ncbddd/disabilityandhealth/emergencypreparedness.html>.
- CDC. "CDC's Disaster Planning Goal: Protect Vulnerable Older Adults." *CDC*, Accessed June 24, 2022, 1, https://www.cdc.gov/aging/pdf/disaster_planning_goal.pdf
- Channel News Asia. "Call for Maximum Working Temperatures Cap After EU Heatwave Deaths." *China News Asia*, July 25, 2022. <https://www.channelnewsasia.com/business/call-maximum-working-temperature-cap-after-eu-heatwave-deaths-2832921>.
- Charlton, Angela and Joseph Wilson. "Fires Scorch Spain and France, Where Flames Reach the Beach." *ABC News*, July 17, 2022. <https://abcnews.go.com/International/wireStory/fires-scorch-france-spain-temperature-related-deaths-soar-86959497>.
- Chavez, Roby. "How Rising Sea Levels Threaten the Lives of Louisiana's Coastal Residents." *PBS NewsHour*, April 5, 2022. <https://www.pbs.org/newshour/nation/difficult-conversations-how-rising-sea-levels-threaten-the-lives-of-louisianas-coastal-residents>.
- Chini, Maïthé. "Belgium in Brief: Bringing the Heat." *The Brussels Times*, July 13, 2022. <https://www.brusselstimes.com/254491/belgium-in-brief-bringing-the-heat>.
- Chisty, Musabber Ali, Ashrafuzzaman Nazim, Mostafizur Rahman, Syeda Erena Alam Dola, and Nesar Ahmed Khan. "Disability Inclusiveness of Early Warning System: A Study on Flood-Prone Areas of Bangladesh." *Disaster Prevention and Management* 30, no. 4/5 (October 2021): 494-509. <https://doi.org/10.1108/DPM-05-2021-0177>.

- Cho, Renee. "How We Know Today's Climate Change is Not Natural." *Columbia Climate School: Climate, Earth, and Society*, April 4, 2017.
<https://news.climate.columbia.edu/2017/04/04/how-we-know-climate-change-is-not-natural/>.
- Climate Action Tracker. "Global Reaction to Energy Crisis Risks Zero Carbon Transition: Analysis of Government Response to Russia's Invasion of Ukraine." *New Climate Institute & Climate Analytics*, June 2022.
https://climateactiontracker.org/documents/1055/CAT_2022-06-08_Briefing_EnergyCrisisReaction.pdf.
- Climate Central. "Study Pinpoints Coastal Wetlands Capable of Surviving Climate Change - With Human Help." *Cision PR Newswire*, June 8, 2022.
<https://www.prnewswire.com/news-releases/study-pinpoints-coastal-wetlands-capable-of-surviving-climate-changewith-human-help-301564000.html>.
- Climate Watch. "Historical GHG Emissions." Climate Watch, n.d.
https://www.climatewatchdata.org/ghg-emissions?end_year=2022®ions=TOP&start_year=1990.
- Coi, Giovanna and Zia Weise. "Excess Deaths Surged as Heat Wave Hit Europe: Preliminary Data Shows Thousands More People Died When Temperatures Soared in July." *Politico*, August 3, 2022.
<https://www.politico.eu/article/excess-death-surged-heat-wave-hit-europe/>.
- Copernicus. "Copernicus: Prolonged and Intense Heatwave Affecting Parts of Western and Northern Europe Breaks Temperature Records; Globally, July 2022 was One of Three Warmest Julys on Record." *Copernicus*, August 8, 2022.
<https://climate.copernicus.eu/copernicus-prolonged-and-intense-heatwave-affecting-parts-western-and-northern-europe-breaks>.
- Copernicus. "Copernicus: Summer 2022 Europe's Hottest on Record." *Copernicus*, September 8, 2022.
<https://climate.copernicus.eu/copernicus-summer-2022-europes-hottest-record>.
- Cursino, Malu. "Spain Heatwave: PM Tells Workers to Stop Wearing Ties to Save Energy." *BBC News*, July 29, 2022.
<https://www.bbc.co.uk/news/world-europe-62350019>.
- Das, Shadhan Kumar. "'The Worst Flood in the Region in the Last 122 Years.'" *International Politics and Society (IPS)*, July 5, 2022.
<https://www.ips-journal.eu/interviews/the-worst-flood-in-the-region-in-the-last-122-years-6044/>.
- Davenport, Coral and Campbell Robertson. "Carbon's Casualties: Resettling the First American 'Climate Refugees.'" *The New York Times*, May 2, 2016.

- https://www.nytimes.com/2016/05/03/us/resettling-the-first-american-climate-refugees.html?smid=tw-nytimes&smtyp=cur&_r=0.
- Davis, Nicola. "UK Heatwave: How to Keep Cool and Stay Safe in 40C." *The Guardian*, July 17, 2022.
<https://www.theguardian.com/uk-news/2022/jul/17/uk-heatwave-how-to-keep-cool-and-stay-safe-in-40c>.
- Demer, Lisa. "The Creep of Climate Change." *Anchorage Daily News*, August 28, 2015.
<https://www.adn.com/features/alaska-news/rural-alaska/2016/11/29/the-creep-of-climate-change/>.
- Denchak, Melissa and Jeff Turrentine. "What is Climate Change?" *Natural Resources Defense Council (NRDC)*, September 1, 2021.
<https://www.nrdc.org/stories/what-climate-change#:~:text=Natural%20causes%20of%20climate%20change,naturally%20occurring%20greenhouse%20gas%20concentrations>.
- Dodd, Tim. "'Up to 10,000 Excess Heatwave Deaths' Should be Anticipated - Ex-Govt Chief Scientist." *Leading Britain's Conversation (LBC)*, July 16, 2022.
<https://www.lbc.co.uk/radio/presenters/matt-frei/excess-deaths-heatwave-uk-weather-national-emergency-temperatures-40c/>.
- Edme, Bob and John Leicester. "With Fires Raging in Europe, France Detains Man Over Blaze." *ABC News*, July 19, 2022.
<https://abcnews.go.com/International/wireStory/man-detained-police-probe-raging-wildfires-france-87058772>.
- Environmental Defense Fund (EDF). "How will Climate Change Affect Alaska?" *EDF*, Accessed June 27, 2022.
https://www.edf.org/sites/default/files/content/regional_releases_alaska_web_version.pdf
- Eurich, Johanna. "Newtok is on the Move." *KYUK*, December 27, 2018.
<https://www.kyuk.org/environment/2018-12-27/newtok-is-on-the-move>.
- European Commission. "EU Solidarity with Slovenia in Combating Wildfires." Press Release, *European Commission*, July 21, 2022.
https://ec.europa.eu/commission/presscorner/detail/en/IP_22_4642
- European Environment Agency (EEA). "Is Europe Reducing its Greenhouse Gas Emissions?" *EEA*, June 22, 2022.
<https://www.eea.europa.eu/themes/climate/eu-greenhouse-gas-inventory>.
- Federal Emergency Management Agency (FEMA). "Preparing for Disaster for People with Disabilities and Other Special Needs." *U.S. Department of Homeland Security & American Red Cross*, August 2004.

- https://www.redcross.org/content/dam/redcross/atg/PDF_s/Preparedness_Disaster_Recovery/General_Preparedness_Recovery/Home/A4497.pdf.
- Ferris, Rebecca and Jason Ferris. *Can't Stop the Water*. Cottage Films, 2013. 33 min. 5 sec. <https://vimeo.com/68436745>.
- Fisher, Jonah. "Climate Change: Ukraine War Prompts Fossil Fuel 'Gold Rush' - Report." *BBC News*, June 8, 2022. <https://www.bbc.com/news/science-environment-61723252>.
- Fresco, Nancy. "Climate Change Means Alaska will be Able to Grow More Food - Now is the Time to Start Planning." *Fast Company*, June 2, 2022. <https://www.fastcompany.com/90719002/climate-change-means-alaska-will-be-able-to-grow-more-food-now-is-the-time-to-start-planning>.
- Frieden, Lex. "The Impact of Hurricanes Katrina and Rita on People with Disabilities: A Look Back and Remaining Challenges." *National Council on Disability*, August 3, 2006. <https://files.eric.ed.gov/fulltext/ED496270.pdf>.
- Gaither, Joshua B., Sophie Galson, Merlin Curry, Samuel M. Keim, Bentley J. Bobrow, and Daniel W. Spaite. "Environmental Hyperthermia in Prehospital Patients with Major Traumatic Brain Injury." *The Journal of Emergency Medicine* 49, issue 3 (September 2015): 375-381. <https://doi.org/10.1016/j.jemermed.2015.01.038>.
- Gamble, Janet, Bradford J. Hurley, Peter A. Schultz, Wendy S. Jaglom, Nisha Krishnan, and Melinda Harris. "Climate Change and Older Americans: State of the Science." *Environmental Health Perspectives* 121, no. 1 (January 2013): 15-22. <https://ehp.niehs.nih.gov/doi/epdf/10.1289/ehp.1205223>.
- Georgetown Climate Center. "Overview of Louisiana's Climate Change Preparations." *Georgetown Climate Center*, Accessed June 16, 2022. <https://www.georgetownclimate.org/adaptation/state-information/louisiana/overview.html>.
- Giovetti, Olivia. "With Nearly 75% of Bangladesh Underwater, Is the Country Facing a Humanitarian Crisis?" *Concern Worldwide USA*, July 1, 2021. <https://www.concernusa.org/story/bangladesh-underwater-humanitarian-crisis/>.
- Giuffrida, Angela. "Italy Puts 25C Limit on Air Conditioning as Ukraine Crisis Forces Energy Rationing." *The Guardian*, April 21, 2022. <https://www.theguardian.com/world/2022/apr/20/operation-thermostat-italy-limits-air-conditioning-amid-energy-crisis-fears>.

- Global Site Plans - The Grid. "Urban Risk: Will New Orleans be Submerged by 2040?" *Smart Cities Dive*, Accessed June 18, 2022.
<https://www.smartcitiesdive.com/ex/sustainablecitiescollective/last-call-will-nola-be-completely-submerged-2040/168826/>.
- Goldenberg, Suzanne, "America's First Climate Refugees." *The Guardian*, May 13, 2013.
<https://www.theguardian.com/environment/interactive/2013/may/13/newtok-alaska-climate-change-refugees>.
- Goldenberg, Suzanne. "An Undeniable Truth?: From Palin to Parnell, Alaska's Politicians Have Struggled to Reconcile Policy with Actuality." *The Guardian*, May 14, 2013.
<https://www.theguardian.com/environment/interactive/2013/may/14/alaska-politics-climate-change-sarah-palin>.
- Goldenberg, Suzanne. "One's Family's Great Escape." *The Guardian*, May 13, 2013.
<https://www.theguardian.com/environment/interactive/2013/may/13/alaska-n-family-newtok-mertarvik>.
- Goode, Erica. "A Wrenching Choice for Alaska Towns in Path of Climate Change." *The New York Times*, November 29, 2016.
<https://www.nytimes.com/interactive/2016/11/29/science/alaska-global-warming.html>.
- Hagenstein, Rand and Corinne Smith. "Alaska Has Incredible Potential for Hydropower, When It's Done Right." *Anchorage Daily News*, May 5, 2016.
<https://www.adn.com/commentary/article/alaska-has-incredible-potential-hydropower-when-its-d-one-right/2016/05/05/>
- Handrakis, John P., Michelle Trbovich, Ellen Merete Hagen, and Michael Price. "Thermodyregulation in Persons with Spinal Cord Injury: Case Series on Use of the Automatic Standards." *Spinal Cord Series and Cases* 3, no. 17086 (December 2017).
<https://www.nature.com/articles/s41394-017-0026-7>.
- Haq, Sana Noor, Hafsa Khalil, Angela Dewan, Aditi Sangal, Mike Hayes, and Elise Hammond. "Heat Wave Scorches Europe as UK Reaches Record-Breaking Temperatures." *CNN*, July 20, 2022.
https://edition.cnn.com/europe/live-news/uk-europe-heatwave-fires-news-071922-intl-gbr/h_aebcef06b7d0c9a28124f2db84bad7a7.
- Harvey, Fiona. "Disabled Being 'Ignored' on Climate Crisis: Study." *The ASEAN Post*, June 11, 2022.
<https://theaseanpost.com/environment/2022/jun/11/disabled-being-ignored-climate-crisis-study>.

- Herrmann, Victoria. "America's First Climate Change Refugees: Victimization, Distancing, and Disempowerment in Journalistic Storytelling." *Energy Research & Social Science*, no. 31 (September 2017): 205-214, <https://doi.org/10.1016/j.erss.2017.05.033>.
- Hohenstatt, Ben. "Gov Says Warming Arctic Could be Good for Alaska." *Juneau Empire*, September 13, 2019. <https://www.juneauempire.com/news/gov-says-warming-arctic-could-be-good-for-alaska/>.
- Hopke, Jill E. "Connecting Extreme Heat Events to Climate Change; Media Coverage of Heat Waves and Wildfires." *Environmental Communication* 14, no. 4 (November 2019). <https://doi.org/10.1080/17524032.2019.1687537>.
- Horton, Ben Anthony. "Painting Barcelona's Rooftops Could Lower Temperatures By Up to Five Degrees, Say Experts." *EuroNews.Green*, January 11, 2022. <https://www.euronews.com/green/2022/01/11/painting-barcelona-s-rooftop-s-could-lower-temperatures-by-up-to-five-degrees-say-experts>.
- Horton, Helena. "Climate Breakdown Made UK Heatwave 10 Times More Likely, Study Finds." *The Guardian*, July 28, 2022. <https://www.theguardian.com/world/2022/jul/28/climate-breakdown-made-uk-heatwave-10-times-more-likely-study-finds>.
- Hostetter, Haley and M.Z. Naser. "Characterizing Disability in Fire Evacuation: A Progressive Review." *Journal of Building Engineering* 53. no. 104573 (August 2022). <https://doi.org/10.1016/j.jobbe.2022.104573>
- Human Rights Watch (HRW). "Marry Before Your House is Swept Away: Child Marriage in Bangladesh." *Human Rights Watch*, June 9, 2015. <https://www.hrw.org/report/2015/06/09/marry-your-house-swept-away/child-marriage-bangladesh>.
- "How New Orleans Sank Below Sea Level (And What They're Doing About It)." Grist. August 27, 2020. YouTube video, 7:55, <https://www.youtube.com/watch?v=9pqzMkMWS0A>.
- Ians. "Over 100 Dead as Flood Continues to Wreak Havoc in Bangladesh: Report." *Business Standard*, July 4, 2022. https://www.business-standard.com/article/international/over-100-dead-as-flood-continues-to-wreak-havoc-in-bangladesh-report-122070400036_1.html.
- Ilhardt, Julia. "'It was Sad Having to Leave': Climate Crisis Splits Alaskan Town in Half." *The Guardian*, June 8, 2021. <https://www.theguardian.com/environment/2021/jun/08/it-was-sad-having-to-leave-climate-crisis-splits-alaskan-town-in-half>.

- Intergovernmental Panel on Climate Change (IPCC). "Climate Change: A Threat to Human Wellbeing and Health of the Planet. Taking Action Now Can Secure Our Future." *IPCC*, February 28, 2022.
<https://www.ipcc.ch/2022/02/28/pr-wgii-ar6/>.
- Jarvie, Jenny. "On a Sinking Louisiana Island, Many Aren't Ready to Leave." *Los Angeles Times*, April 23, 2019.
<https://www.latimes.com/nation/la-na-jean-charles-sinking-louisiana-island-20190423-htmlstory.html>.
- Jodoin, Sébastien. "Status Report on Disability Inclusion in National Climate Commitments and Policies." *McGill Centre for Human Rights and Legal Pluralism, Disability-Inclusive Climate Action Research Programme (DICARP), and International Disability Alliance (IDA)*, June 2022.
https://www.internationaldisabilityalliance.org/sites/default/files/drcc_status_report_english_0.pdf.
- Jones, Sam. "Forest Fires Rage Across Europe as Heatwave Sends Temperatures Soaring." *The Guardian*, July 17, 2022.
<https://www.theguardian.com/world/2022/jul/17/forest-fires-rage-across-europe-as-heatwave-sends-temperatures-soaring>.
- Jones, Sam. "'This is a Warning': Spain Reels from Devastating Blazes and Heatwaves." *The Guardian*, July 22, 2022.
<https://www.theguardian.com/world/2022/jul/22/spain-heatwave-rebuild-wildfires-temperatures>.
- Kar, Devyani. "Climate Change Threatens Louisiana's Future, but the State is Taking Bold Action to Increase its Resilience." *Environmental Defense Fund (EDF)*, July 22, 2021.
<https://blogs.edf.org/climate/411/2021/07/22/climate-change-threatens-louisianas-future-but-the-state-is-taking-bold-action-to-increase-its-resilience/>.
- Kett, Maria, Gaya Sriskanthan, and Ellie Cole. "Disability and Climate Justice: A Research Project." *Open Society Foundations*, December 2021, 4.
https://www.ucl.ac.uk/epidemiology-health-care/sites/epidemiology_health_care/files/disability_and_climate_justice_research_project_final_to_share.pdf.
- Kim, Esther. "Europe Heatwaves Disastrous for Older People, People with Disabilities: Climate Crisis Needs Effective, Inclusive Heat Planning and Response." *Human Rights Watch*, August 12, 2022.
<https://www.hrw.org/news/2022/08/12/europe-heatwaves-disastrous-older-people-people-disabilities>.
- Kim, Greg. "After 20 Year Wait, Newtok Residents Leave Home to Pioneer Mertarvik." *KYUK*, October 22, 2019.
<https://www.kyuk.org/environment/2019-10-22/after-20-year-wait-newtok-residents-leave-home-to-pioneer-mertarvik>.

- Kim, Greg. "After Moving to New Village, Mertarvik Residents Say They are Healthier." *KYUK*, July 27, 2020.
<https://www.kyuk.org/health/2020-07-27/after-moving-to-new-village-mertarvik-residents-say-they-are-healthier>.
- Kim, Greg. "LKSD Begins Design of New School in Mertarvik, Which will Replace Temporary Classrooms in Evacuation Center." *KYUK*, February 3, 2022.
<https://www.kyuk.org/education/2022-02-03/lksd-begins-design-of-new-school-in-mertarvik-which-will-replace-temporary-classrooms-in-evacuation-center>.
- Kim, Greg. "Mertarvik to Get Airport by 2022." *KTOO*, April 10, 2021.
<https://www.ktoo.org/2021/04/10/mertarvik-to-get-airport-by-2022/>.
- Kim, Greg. "Mertarvik's Lack of a Commercial Airport May Have Already Cost Lives." *KYUK*, July 28, 2020.
<https://www.kyuk.org/health/2020-07-28/mertarviks-lack-of-a-commercial-airport-may-have-already-cost-lives>.
- Kim, Si-Heon, Soo-Nam Jo, Hyung-Nam Myung, and Jae-Yeon Jang. "The Effect of Pre-Existing Medical Conditions on Heat Stroke During Hot Weather in South Korea." *Environmental Research* 133 (August 2014): 246-252.
<https://doi.org/10.1016/j.envres.2014.06.003>.
- King, Molly M. and Maria A. Gregg. "Disability and Climate Change: A Critical Realist Model of Climate Justice." *Sociology Compass* 16, issue 1 (December 2021): e12954. <https://doi.org/10.1111/soc4.12954>.
- Kluge, Hans Henri P. "Heatwave in Europe: Local Resilience Saves Lives - Global Collaboration Will Save Humanity: Statement by WHO Regional Director for Europe, Dr Hans Henri P. Kluge." *World Health Organization (WHO)*, July 22, 2022.
<https://www.who.int/europe/news/ite/22-07-2022-heatwave-in-europe--local-resilience-saves-lives---global-collaboration-will-save-humanity>.
- Kosanic, Aleksandra, Jan Petzold, Berta Martín-López, and Mialy Razanajatovo. "An Inclusive Future: Disabled Populations in the Context of Climate and Environmental Change." *Current Opinion in Environmental Sustainability* 55 (April 2022): 101159. <https://doi.org/10.1016/j.cosust.2022.101159>.
- LA SAFE. "Our Mission." *LA SAFE*, Accessed June 17, 2022.
<https://lasafe.la.gov/about-us/>.
- Le Page, Michael. "Why Have We Seen So Many Heatwaves Around the World in 2022?" *New Scientist*, September 8, 2022.
<https://www.newscientist.com/article/2336829-why-have-we-seen-so-many-heatwaves-around-the-world-in-2022/>.

- Lenhart, Anna. "10 Years After Katrina: Are We Ready with Accessible Emergency Preparedness?" *New Editions Consulting, Inc.*, Accessed 20 June 2022.
<https://www.neweditions.net/blogs/10-years-after-katrina-are-we-ready-accessible-emergency-preparedness>.
- Levy, Barry S. and Jonathan A. Patz. "Climate Change, Human Rights, and Social Justice." *Annals of Global Health* 81, issue 3 (May-June 2015): 310-322. <https://doi.org/10.1016/j.aogh.2015.08.008>.
- "Louisiana Disappearing: Living on the Brink of Climate Change." AJ+. December 2, 2015. YouTube video, 5:14,
https://www.youtube.com/watch?v=4THdX9KOZ_4.
- Louisiana Governor's Office of Coastal Activities. "Louisiana Climate Action Plan: Draft Final Report." *State of Louisiana*, December 22, 2021.
<https://gov.louisiana.gov/assets/docs/CCI-Task-force/website/CTFDraftFinalPlan12222021.pdf>.
- Louisiana Watershed Initiative, "Creating a More Resilient Louisiana," *Louisiana Watershed Initiative*, Accessed June 16, 2022, <https://watershed.la.gov/>.
- Louisiana's Strategic Adaptations for Future Environments (LA SAFE). "Regional & Parish Adaptation Strategies." *LA SAFE*, 2019, <https://lasafe.la.gov/>.
- Maguire, Sean. "In Split Decision, Alaska Supreme Court Dismisses Climate Change Case." *Alaska's News Source*, January 29, 2022.
<https://www.alaskasnewsresource.com/2022/01/29/split-decision-alaska-supreme-court-dismisses-climate-change-case/>.
- Maishman, Elsa. "In Pictures: From Tenerife to Greece, Wildfires Rage in Europe." *BBC News*, July 24, 2022.
<https://www.bbc.co.uk/news/world-europe-62285090>.
- Maltais, Danielle. "Elderly People with Disabilities and Natural Disasters: Vulnerability of Seniors and Post Trauma." *HSOA Journal of Gerontology & Geriatric Medicine*, 5, no. 41 (December 2019).
https://www.heraldopenaccess.us/article_pdf/36/elderly-people-with-disabilities-and-natural-disasters-vulnerability-of-seniors-and-post-trauma.pdf.
- Maltezos, Renee and Federico Maccioni. "Europe's Heatwave Reaches Poland, Greece as it Moves Eastwards, Brings Wildfires." *Reuters*, July 22, 2022.
<https://www.reuters.com/world/europe/europes-heatwave-reaches-poland-greece-it-moves-eastwards-brings-wildfires-2022-07-21/>.
- Marshall, Bob. "The People of Isle de Jean Charles Aren't the Country's First Climate Refugees." *The Lens*, December 6, 2016.

- <https://thelensnola.org/2016/12/06/the-people-of-isle-de-jean-charles-arent-the-countrys-first-climate-refugees/>.
- Martinez, Guillermo. “‘Climate Change Affects Everyone’: Europe Battles Wildfires in Intense Heat.” *Reuters*, July 17, 2022.
<https://www.reuters.com/business/environment/spain-portugal-battle-wildfires-heatwaves-scorch-southern-europe-2022-07-17/>.
- Mathiesen, Karl, Zia Weise, and Pieter Haeck. “Europe’s Not Ready for a Hotter World.” *Politico*, July 24, 2022.
<https://www.politico.eu/article/europe-climate-change-global-warming-heat-wave-adaptation/>.
- McNulty, Leanne. “Disability Rights is a Climate Justice Issue. Here’s Why.” *Green is the New Black*, January 25, 2022.
<https://greenisthenewblack.com/disability-rights-is-a-climate-justice-issue-heres-why/>.
- Méheut, Constant and Aurelien Breeden. “Firefighters Battle an ‘Explosive Cocktail’ of Wind and Flames in Southwestern France.” *The New York Times*, July 19, 2022,
<https://www.nytimes.com/2022/07/19/world/europe/france-wildfires.html>.
- Mehta, Michelle. “New Orleans, Louisiana: Identifying and Becoming More Resilient to Impacts of Climate Change.” *Natural Resources Defense Council (NRDC)*, July 2011.
https://www.nrdc.org/sites/default/files/ClimateWaterFS_NewOrleansLA.pdf.
- Melograna, Jordan, director. *The Right to be Rescued*. Rooted in Rights, 2015. 15 min., 18 sec. <https://www.youtube.com/watch?v=FIFEvqafklk>.
- Melograna, Jordan. “People with Disabilities Left Behind During Katrina Tell their Stories.” *HuffPost*, August 27, 2015.
https://www.huffpost.com/entry/people-with-disabilities-2_b_8045700.
- Met Office. “Climate Zones.” *Met Office*, Accessed 20 August 2022.
<https://www.metoffice.gov.uk/weather/climate/climate-explained/climate-zones>.
- Mieze, Marta. “European Heatwave to Engulf Belgium in Next Few Weeks.” *The Brussels Times*, July 12, 2022.
<https://www.brusselstimes.com/253889/another-heatwave-en-route-to-belgium>.
- Minio-Paluello, Mika. “We’ve Reached Boiling Point - Nobody Should Have to Work in Temperatures Above 30C.” *The Guardian*, July 19, 2022.
<https://www.theguardian.com/>

- commentisfree/2022/jul/19/heat-deadly-workers-uk-no-maximum-workplace-temperature.
- Moritz, Thibaud. "The Heat Across Europe Has Led to Wildfires, Including This One in Louchats, France, in July, Which Have Released Lots of Carbon into the Atmosphere." Photograph. *New Scientist*, August 4, 2022. <https://www.newscientist.com/article/2332298-european-wildfires-have-released-a-record-amount-of-carbon/>.
- Mostofa, Naim. "Disability and Disaster: Persons with Disability in a Flood Prone Area of Bangladesh." *SSRN*, (February 2022): 5. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4025458.
- Motiwalla, Naqiya. "Local Climate Action Persists in Alaska." *Climate Xchange*, March 27, 2020. <https://climate-xchange.org/2020/03/27/local-climate-action-persists-in-alaska/>.
- National Council on Disability (NCD). "Needs of People with Disabilities with Psychiatric Disabilities During and After Hurricanes Katrina and Rita: Position Paper and Recommendations." *National Council on Disability*, July 7, 2006. <https://ncd.gov/publications/2006/07142006>.
- New Scientist Environment. "The Recent Heatwave Should Act as a Wake-Up Call About Climate Action." *New Scientist*, July 20, 2022. <https://www.newscientist.com/article/2329868-the-recent-heatwave-should-act-as-a-wake-up-call-about-climate-action/>.
- Norton-Smith, Kathryn, Kathy Lynn, Karletta Chief, Karen Cozzetto, Jamie Donatuto, Margaret Hiza Redsteer, Linda E. Kruger, Julie Maldonado, Carson Viles, and Kyle P. Whyte. "Climate Change and Indigenous Peoples: A Synthesis of Current Impacts and Experiences." *United States Department of Agriculture (USDA), Forest Service, Pacific Northwest Research Station* 136 (2016): <https://doi.org/10.2737/PNW-GTR-944>.
- Office of the Press Secretary. "Fact Sheet: National Disaster Resilience Competition." *The White House*, June 14, 2014. <https://obamawhitehouse.archives.gov/the-press-office/2014/06/14/fact-sheet-national-disaster-resilience-competition>.
- Office of the United Nations High Commissioner for Human Rights (OHCHR). "Persons with Disabilities Disproportionately Affected by Climate Change." *OHCHR*, July 24, 2020. <https://www.ohchr.org/en/stories/2020/07/persons-disabilities-disproportionately-affected-climate-change>.
- Oltermann, Philip. "German Cities Impose Cold Showers and Turn Off Lights Amid Russian Gas Crisis." *The Guardian*, July 28, 2022.

- <https://www.theguardian.com/world/2022/jul/28/german-cities-impose-cold-showers-and-turn-off-fountains-in-face-of-russian-gas-crisis>.
- Orie, Amarachi and Angela Dewan. "Record-Breaking Heat Wave in Europe Will Be the Norm by 2035, Analysis Shows." *CNN*, August 25, 2022.
<https://edition.cnn.com/2022/08/25/europe/record-heat-climate-analysis-summer-2035-intl-scli/index.html>.
- Orlinsky, Katie. "Monica Kasayuli Walks Across a Flooded Walkway on Her Way Home in Newtok, Alaska. May 26th, 2019." Photograph. Prime Collective. May 26, 2019. <https://www.primecollective.com/newtok>.
- Osborne, Samuel. "Pakistan Flooding: Record-Breaking Rains Threaten 4,500-Year-Old Archaeological Site as Lake Close to Overflowing." *Sky News*, September 6, 2022.
<https://news.sky.com/story/pakistan-flooding-record-breaking-rains-threaten-4-500-year-old-archaeological-site-as-lake-close-to-overflowing-12691231>.
- Otte, Kathleen. "No One Left Behind: Including Older Adults and People with Disabilities in Emergency Planning." *Administration for Community Living (ACL)*, September 4, 2015.
<https://acl.gov/news-and-events/acl-blog/no-one-left-behind-including-older-adults-and-people-disabilities#:~:text=According%20to%20a%20White%20House,left%20behind%20in%20Hurricane%20Katrina.%E2%80%9D>.
- Pappas, Stephanie. "For the First Time, Scientists Have Named a Heat Wave." *Live Science*, August 28, 2022.
<https://www.livescience.com/first-named-heat-wave>.
- Parekh, Marcus, Berny Torre, and Josh White. "UK Heatwave: Thunderstorms to Bring Further Rail Chaos on Wednesday." *The Telegraph*, July 19, 2022.
<https://www.telegraph.co.uk/news/2022/07/19/heatwave-uk-weather-record-temperature-today-met-office-trains/?curator=upstrack.com>.
- Parker, Halle. "Climate Change Could Prove More Deadly in Louisiana Without Immediate Action, Report Says." *WWNO - New Orleans Public Radio*, March 3, 2022.
<https://www.wnno.org/coastal-desk/2022-03-03/climate-change-could-prove-more-deadly-in-louisiana-without-immediate-action-report-says>.
- Parks, Clint. "The Biloxi-Chitimacha-Choctaw Community and Their Land." *National Geographic*, May 20, 2022.
<https://education.nationalgeographic.org/resource/biloxi-chitimacha-choctaw-community-and-their-land>.
- Pavid, Katie. "Climate Catastrophe Has Happened Before - And It's Teaching Us About the Future." *Natural History Museum*, June 10, 2019.

- <https://www.nhm.ac.uk/discover/news/2019/june/climate-catastrophe-has-happened-before.html>.
- Pavithran, Lekshmy and Balaram Menon. "Lives Lost, Homes Ravaged from India to South Korea, The Horrific Aftermath of Floods." *Gulf News*, August 24, 2022.
<https://gulfnews.com/photos/news/lives-lost-homes-ravaged-from-india-to-south-korea-the-horrific-aftermath-of-floods-1.1661338563841?slide=1>.
- PBS NewsHour. "As Water Levels Rise, This Alaska Town is Fleeing to Higher Ground." PBS NewsHour. November 28, 2019. YouTube video, 7:38.
<https://www.youtube.com/watch?v=2vMZsgfQrw8>.
- Pereria, Paulo, Ferdo Bašić, Igor Bogunovic, and Damia Barcelo. "Russian-Ukrainian War Impacts the Total Environment." *Science of The Total Environment* 837, no. 155865 (September 2022).
<https://doi.org/10.1016/j.scitotenv.2022.155865>.
- Phillips, Anna, Brady Dennis, Jason Samenow, John Muyskens, and Naema Ahmed. "Summer in America is Becoming Hotter; Longer and More Dangerous." *The Washington Post*, July 2, 2022.
<https://www.washingtonpost.com/climate-environment/2022/07/02/summer-2022-climate-change-heat/>.
- Plumer, Brad and Nadja Popovich. "Yes, There Has Been Progress on Climate. No, It's Not Nearly Enough." *The New York Times*, October 25, 2021.
<https://www.nytimes.com/interactive/2021/10/25/climate/world-climate-pledges-cop26.html>.
- Raedle, Joe. "Jerry Norton Dresses Warmly on a Cool Morning in Kivalina, on September 14, 2019." Photograph. The Atlantic. September 18, 2019.
https://www.theatlantic.com/photo/2019/09/photos-impacts-climate-change-kivalina-alaska/598282/?gclid=Cj0KCQjwxNT8BRD9ARIsAJ8S5xYHN6r6Juz2_4ERq08tnNo7xVsmt-BDvtl2Z7p9iuRF7DMFWUoZIWUaAvAIEALw_wcB.
- Rannard, Georgia. "UK's 40C Heatwave 'Basically Impossible' Without Climate Change." *BBC News*, July 29, 2022.
<https://www.bbc.co.uk/news/science-environment-62335975>.
- RESTORE the Mississippi River Delta. "Funding," *RESTORE the Mississippi River Delta*, Accessed June 17, 2022.
https://mississippiriverdelta.org/restoration-solutions/funding/?_gl=1*18juc3t*_ga*NzMxNDA3NjAuMTY1NDg4MzE3Mg..*_ga_2B3856Y9QW*MTY1NDg4MzE3Mi4xLjAuMTY1NDg4MzE3Mi42MA..*_ga_WE3BPRQKW0*MTY1NDg4MzE3Mi4xLjAuMTY1NDg4MzE3Mi42MA..*_ga_Q5CTTQBJD8*MTY1NDg4MzE3Mi4xLjAuMTY1NDg4MzE3Mi42MA.

- RESTORE the Mississippi River Delta. “Louisiana’s 2017 Coastal Master Plan.” *RESTORE the Mississippi River Delta*, Accessed June 17, 2022.
<https://mississippiriverdelta.org/masterplan/>.
- Rhoden-Paul, Andre and Doug Falkner. “London Fire Brigade had Busiest Day since World War Two, Says London Mayor.” *BBC News*, July 20, 2022.
<https://www.bbc.co.uk/news/uk-62232654>.
- Richards, Edward. “Why the Master Plan will not Protect Louisiana and What We Should Do Instead.” *LSU Law Center: Climate Change Law and Policy Project*, February 21, 2017.
<https://sites.law.lsu.edu/coast/2017/02/why-the-master-plan-will-not-protect-the-coast-and-what-we-should-do-instead/>.
- Rosen, Yereth. “Alaska’s New Governor has Dismissed the State’s Climate Team and Scrapped its Climate Policy and Plan.” *Arctic Today*, February 26, 2019.
<https://www.arctictoday.com/alaskas-new-governor-has-dismissed-the-states-climate-team-and-scrapped-climate-policy-and-plan/>.
- Roth, Marcie. “A Resilient Community is One that Includes and Protects Everyone.” *Bulletin of the Atomic Scientists* 74, issue 2 (February 2018): 91-94. <https://doi.org/10.1080/00963402.2018.1436808>.
- Rousi, Efi, Kai Kornhuber, Goratz Beobide-Arsuaga, Fei Luo, and Dim Coumou. “Accelerated Western European Heatwave Trends Linked to More-Persistent Double Jets Over Eurasia.” *Nature Communications* 13, no. 3851 (July 2022). <https://doi.org/10.1038/s41467-022-31432-y>.
- Roussi, Antoaneta and Eddy Wax. “‘Just Hell: 5 Countries Suffering in Europe’s Heat Wave: ‘Unprecedented’ Lethal Weather Starts to Engulf European Nations.” *Politico*, July 16, 2022.
<https://www.politico.eu/article/five-countries-suffering-from-the-heat-wave-in-europe/>.
- Runefors, Marcus, Anders Jonsson, and Carl Bonander. “Factors Contributing to Survival and Evacuation in Residential Fires Involving Older Adults in Sweden.” *Fire Safety Journal* 122, no. 103354 (June 2021).
<https://doi.org/10.1016/j.firesaf.2021.103354>.
- Sarajevo Times, “BiH is Seeking International Assistance for Extinguishing of Wildfires.” *Sarajevo Times*, July 26, 2022.
<https://sarajevotimes.com/bih-is-seeking-international-assistance-for-extinguishing-of-wildfires/>.
- Setyawan, Kezia. “To Combat Climate Change, Gulf Groups to Hold 1st Environmental Justice Festival in Baton Rouge.” *WWNO - New Orleans Public Radio*, June 1, 2022.

- <https://www.wwno.org/coastal-desk/2022-06-01/to-combat-climate-change-gulf-states-come-together-for-environmental-justice-festival>.
- Shankman, Sabrina. "Louisiana's New Climate Plan Prepares for Resilience and Retreat as Sea Level Rises." *Inside Climate News*, May 17, 2019.
<https://insideclimatenews.org/news/17052019/louisiana-climate-migration-plan-retreat-sea-level-rise-global-warming/>.
- Sharma, Richa and R. Srikanth. "The Consequences of Climate Change on Vulnerable Populations." In *Climate Change and the Health Sector*. Eds. Alexander Thomas, K. Srinath Reddy, Divya Alexander, and Poornima Prabhakaran (London: Routledge India, 2021), 98-105.
<https://doi.org/10.4324/9781003190516-13>.
- Sky News, "Major Incident Declared Across London After 'Huge Surge' in Fires and Homes Destroyed on UK's Hottest-Ever Day." *Sky News*, July 20, 2022.
<https://news.sky.com/story/major-incident-declared-across-london-after-huge-surge-in-fires-and-homes-destroyed-on-uks-hottest-ever-day-12655061>.
- Smith, Caroline J. "Pediatric Thermoregulation: Considerations in the Face of Global Climate Change." *Nutrients* 11, no. 9 (August 2016).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6770410/>.
- Spannagel, Ellen. "Record Canada Heat Harms Older People and People with Disabilities." *Human Rights Watch*, July 9, 2021.
<https://www.hrw.org/news/2021/07/09/record-canada-heat-harms-older-people-and-people-disabilities>.
- State of Alaska. "Coastal Flooding & Erosion in Alaska: Alaska Division of Geological & Geophysical Surveys." *State of Alaska*, Accessed June 27, 2022.
<https://www.commerce.alaska.gov/web/Portals/4/pub/RA/Coastal%20Flooding%20and%20Erosion%20in%20AK.pdf>.
- Stein, Penelope J.S. and Michael Ashley Stein. "Climate Change and the Right to Health of People with Disabilities." *The Lancet: Global Health* 10, issue 1 (December 2021): E24-E25.
[https://doi.org/10.1016/S2214-109X\(21\)00542-8](https://doi.org/10.1016/S2214-109X(21)00542-8).
- The Associated Press (AP), "Alaska Officials Complete State-Level Climate Policy Draft," *The Seattle Times*, May 20, 2018.
<https://www.seattletimes.com/nation-world/alaska-officials-complete-state-level-climate-policy-draft/>.
- The Climate Reality Project. "How is the Climate Crisis Affecting Alaska?" *The Climate Reality Project*, March 11, 2020.

<https://www.climaterealityproject.org/blog/how-climate-crisis-affecting-alaska>.

The Climate Reality Project. “How the Climate Crisis Is Affecting Louisiana.” Climate Reality Project, February 18, 2020.
<https://www.climaterealityproject.org/blog/how-climate-crisis-affecting-louisiana>.

The Local.it. “Italian Wildfires ‘Three Times Worse’ Than Average as Heatwave Continues.” *The Local.it*, June 27, 2022.
<https://www.thelocal.it/20220627/heatwave-italian-wildfires-already-three-times-worse-than-average/>.

Townsend, Mark and James Tapper. “Johnson Skips Emergency Cobra Meeting as Experts Warn Thousands May Die in UK Heatwave.” *The Guardian*, July 16, 2022.
<https://www.theguardian.com/uk-news/2022/jul/16/johnson-skips-emergency-cobra-meeting-as-experts-warn-thousands-may-die-in-uk-heatwave>.

Tu, Duy Linh and Julian Lim. “On the Louisiana Coast, an Indigenous Community Loses Homes to Climate Change.” *Scientific American*, June 15, 2021.
<https://www.scientificamerican.com/article/on-the-louisiana-coast-an-indigenous-community-loses-homes-to-climate-change/>.

UK Health Security Agency (UKHSA). “Research and Analysis: Heat Mortality Monitoring Report: 2021.” *UK Health Security Agency*, May 17, 2022.
<https://www.gov.uk/government/publications/heat-mortality-monitoring-reports/heat-mortality-monitoring-report-2021>.

Unitarian Universalist Service Committee (UUSC). “Climate Change in Louisiana.” *UUSC*, Accessed June 19, 2022.
<https://www.uusc.org/climate-change-in-louisiana/>.

United Nations Conference on Trade and Development (UNCTAD). “Smallest Footprints, Largest Impacts: Least Developed Countries Need a Just Sustainable Transition.” *UNCTAD*, October 1, 2021.
<https://unctad.org/topic/least-developed-countries/chart-october-2021>.

United Nations Environment Programme. “How Climate Change Disproportionately Impacts Those with Disabilities.” *UN Environment Programme*, December 9, 2019.
<https://www.unep.org/news-and-stories/story/how-climate-change-disproportionately-impacts-those-disabilities>.

United Nations Framework Convention on Climate Change (UNFCCC), “Fact Sheet: Climate Change Science - The Status of Climate Change Science Today,” *UNFCCC*, February 2011, 1,

- https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_science.pdf.
- UNFCCC. “The Paris Agreement.” *UNFCCC*, Accessed 23 August 2022.
<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.
- United Nations High Commissioner for Refugees (UNHCR). “Climate Change and Disaster Displacement.” *UNHCR*, Accessed 23 August 2022.
<https://www.unhcr.org/climate-change-and-disasters.html>.
- UNHCR. “What is a Refugee?” *UNHCR*, Accessed 23 August 2022.
<https://www.unhcr.org/what-is-a-refugee.html#:~:text=The%201951%20Refugee%20Convention%20is,group%2C%20or%20political%20opinion.%E2%80%9D>.
- United Nations (UN) Human Rights Council General Assembly. “Analytical Study on the Promotion and Protection of the Rights of Older Persons in the Context of Climate Change: Report of the Office of the United Nations High Commissioner for Human Rights.” *UN OHCHR*, June-July 2021.
<https://documents-dds-ny.un.org/doc/UNDOC/GEN/G21/099/23/PDF/G2109923.pdf?OpenElement>.
- UN Human Rights Council General Assembly. “The Impacts of Climate Change on the Human Rights of People in Vulnerable Situations: Report of the Secretary-General.” *UN OHCHR*, June-July 2022.
<https://documents-dds-ny.un.org/doc/UNDOC/GEN/G22/336/00/PDF/G2233600.pdf?OpenElement>.
- UN Human Rights Council General Assembly. “Analytical Study on the Promotion and Protection of the Rights of Persons with Disabilities in the Context of Climate Change: Report of the Office of the United Nations High Commissioner for Human Rights.” *Office of the United Nations High Commissioner for Human Rights (UN OHCHR)*, June-July 2020.
<https://documents-dds-ny.un.org/doc/UNDOC/GEN/G20/097/56/PDF/G2009756.pdf?OpenElement>.
- United States Army Corps of Engineers (USACE). “Alaska Baseline Erosion Assessment: Study Findings and Technical Report.” *USACE: Alaska District*, March 2009.
https://web.archive.org/web/20170911200034/http://climatechange.alaska.gov/docs/iaw_USACE_erosion_rpt.pdf.
- United States Environmental Protection Agency (US EPA). “What Climate Change Means for Louisiana.” *US EPA*, August 2016.
<https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-la.pdf>.

- US EPA, "Causes of Climate Change," *US EPA*, August 19, 2022, <https://www.epa.gov/climatechange-science/causes-climate-change>.
- US EPA. "Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts." *EPA*, September 2021. https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.
- US Government Accountability Office (GAO). "Alaska Native Villages: Most are Affected by Flooding and Erosion, but Few Qualify for Federal Assistance." GAO, December 12, 2003, <https://www.gao.gov/products/gao-04-142>.
- Vanderplanken, Kirsten, Peter van den Hazel, Michael Marx, Ahmad Zia Shams, Debarati Guha-Sapir, and Joris Adriaan Frank van Loenhout. "Governing heatwaves in Europe: Comparing Health Policy and Practices to Better Understand Roles, Responsibilities and Collaboration." *Health Research Policy and Systems* 19, no. 20 (February 2021): 1. <https://health-policy-systems.biomedcentral.com/articles/10.1186/s12961-020-00645-2>.
- Vaughan, Adam. "European Wildfires Have Released a Record Amount of Carbon." *New Scientist*, August 4, 2022. <https://www.newscientist.com/article/2332298-european-wildfires-have-released-a-record-amount-of-carbon/>.
- Waddell, Lily. "Heatwave Records are Broken as Wildfires Scorch Europe." *Evening Standard*, July 20, 2022. <https://www.standard.co.uk/news/world/europe-heatwave-record-temperatures-uk-france-italy-greece-fire-b1013464.html>.
- Walsh-Warder, Molly. "The Disproportionate Impact of Hurricane Katrina on People with Disabilities." *National Council on Disability*, 2006. https://mdsoar.org/bitstream/handle/11603/3744/Verge13_Walsh-WarderMolly.pdf?sequence=1&isAllowed=y.
- Wernick, Adam and Annie Minoff. "Will These Alaska Villagers be America's First Climate Change Refugees?" *The World*, August 9, 2015. <https://theworld.org/stories/2015-08-09/will-residents-kivalina-alaska-be-first-climate-change-refugees-us>.
- Westphal, Sydney A., Raymond D. Childs, Karen M. Seifert, Mary E. Boyle, Margaret Fowke, Paul Iñiguez, and Curtiss B. Cook. "Managing Diabetes in the Heat: Potential Issues and Concerns." *Endocrine Practice* 16, no. 3 (May 2010): 506-511. <https://doi.org/10.4158/EP09344.RA>.
- White, Kathleen D. and Jeffrey R. Arnold. "Recent US Climate Change and Hydrology Literature Applicable to US Army Corps of Engineers Missions: Alaska Region." *United States Army Corps of Engineers (USACE) Climate*

- Preparedness and Rescue* (September 2015): 9.
<https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/6745/>.
- Widmer, William. "A Louisiana Tribe's Long Fight Against the American Tide." Photograph. September 3, 2019. Oxford American.
<https://main.oxfordamerican.org/magazine/item/1816-goodbye-to-good-earth>.
- Wise, Peter and Leslie Hook. "Wildfires Rage Across Portugal as Intense Heatwave Grips Europe." *Financial Times*, July 15, 2022.
<https://www.ft.com/content/e9e20237-3007-4e50-8c0f-2aca3cad7735>.
- Wolbring, Gregor. "A Culture of Neglect: Climate Discourse and Disabled People." *A Journal of Media and Culture* 12, no. 4 (October 2009):
<http://dx.doi.org/10.11575/PRISM/33811>.
- Wood, Lucy. "Climate Change is Invisible, Insidious and Urgent. Can the Arts Help Us See It?" *The Guardian*, October 28, 2016.
<https://www.theguardian.com/science/political-science/2016/oct/28/climate-change-is-invisible-insidious-and-urgent-can-the-arts-help-us-see-it>.
- Woodruff, Emily. "In Best of Times, New Orleans is Hard on People with Disabilities. In Hurricanes, It's Deadly." *NOLA*, June 11, 2022.
https://www.nola.com/news/healthcare_hospitals/article_df0265d4-e803-11ec-b4e6-af58cbe03909.html.
- World Book. "European Climate." *World Book*, 2006.
https://web.archive.org/web/20110723020158/http://www.asparis.net/lower_school/2dgrade/maps/climate/europe.htm.
- Wright, Beverly and Earthea Nance. "Toward Equity: Prioritizing Vulnerable Communities in Climate Change." *Duke Forum for Law & Social Change* 4, no. 1 (2012): 1-21.
<https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1024&context=dfisc>.
- Yoder, Sarah. "Assessment of the Potential Health Impacts of Climate Change in Alaska." *State of Alaska Epidemiology*, January 8, 2018.
https://www.commerce.alaska.gov/web/Portals/4/pub/Potential_Health_Impacts_ClimateChange1.2018.pdf.
- Yu, Verna. "China Reports 'Most Severe' Heatwave and Third Driest Summer on Record." *The Guardian*, September 7, 2022.
<https://www.theguardian.com/world/2022/sep/07/china-reports-most-severe-heatwave-and-lowest-rainfall-on-record>.