



FACT SHEET

Increasing Temperatures Because of the Climate Change Crisis is a Reproductive Justice Issue in the United States

HUMAN
RIGHTS
WATCH



BLACK WOMEN'S
HEALTH IMPERATIVE

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Latina Institute
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BACKGROUND

The climate crisis presents major threats to health, harms that will be felt disproportionately by women due to persistent gender inequity worldwide.¹ The more entrenched the discrimination is, the greater the differential impact is likely to be. In the United States, as elsewhere in the world, women, especially women of color, are poorer than men and have fewer resources to fall back on in times of long-term or acute crises, including drought, flooding, heat waves, the impact from hurricanes and other storms, and the Covid-19 pandemic.² Women are also more likely than men to be single parents and caregivers, meaning more responsibility and less flexibility or predictability in their lives.³

Pregnant people – a group that is mostly women but can include transgender men and non-binary people – as well as the developing fetus, adolescents, and young children, face additional health and nutrition risks, costs, and needs; and may be biologically more sensitive to the environment and pollution.

Rising temperatures and extreme weather events can adversely impact the health of individuals while pregnant, the health of the fetus, and children. Pregnant people are more vulnerable to heat stress than healthy people who are not pregnant, and a growing number of studies are finding a correlation between heat exposure and preterm birth and other adverse birth outcomes such as low birth weight and stillbirth. While communities and individuals can take some action to reduce their own carbon emissions and adapt to changes to come, reversing climate change and preparing for health impacts requires serious government action. Under US President Donald Trump there has instead been federal backtracking.

Reproductive justice seeks the fulfillment of international human rights protections, including the right to non-discrimination on the basis of gender, race and ethnicity, among other factors.⁴ Reproductive justice also seeks the fulfillment of the right to health, enshrined in international law including the International Covenant on Economic, Social and Cultural Rights (ICESCR), and adopted in some national constitutions, and specifically calls on states to work “for the reduction of the stillbirth-rate and of infant [under 5] mortality and for the healthy development of the child”. This, according to treaty body experts, “may be understood as requiring measures to improve child and maternal health, sexual and reproductive health services, including... pre and postnatal care... and access to information.”⁵ International human rights law requires national and local governments to pay special attention to the needs of vulnerable individuals, and protect individuals from discrimination.

Reproductive Justice – a movement created in 1984 by Black women’s rights activists in the US that centers the history and experiences of women of color and other marginalized groups – is committed to legal and genuinely equitable access to comprehensive, high-quality reproductive health services and a healthy and safe environment for all women to be pregnant and safely raise children in. See resources at end for SisterSong, Black Women’s Health Imperative, and In Our Own Voice: National Black Women’s Reproductive Justice Agenda.

CLIMATE AND PREGNANCY

“Climate change impacts create cascading and interrelated mental, physical and community health effects”

– US GOVERNMENT GLOBAL CHANGE PROGRAM, TASKED BY THE US CONGRESS TO PROVIDE DATA ON CLIMATE CHANGE TO HELP GUIDE POLICY AND PREPARATIONS.⁶

As a result of climate change, temperatures across the US are increasing, and heat waves are predicted to increase in intensity and frequency.⁷ Alongside impacts on pregnancy, heat kills more people than all other weather-related deaths combined, and heat illness is on the rise.⁸ There is a limit to how much heat the human body can adapt to, and even below this limit hotter weather will affect livelihoods that involve significant amounts of outdoor physical activity such as agricultural and construction work, potentially making some regions uninhabitable by the end of the century.⁹

Extreme cuts in carbon emissions are urgently required to prevent the increase of global average temperatures rising above 1.5 degrees C [a watershed temperature limit to prevent drastic changes¹⁰], cap global heating, and protect human health.¹¹ However, because so much carbon is already in our atmosphere, even if all countries take immediate action to drastically reduce carbon emissions, temperature increases will continue globally, including in the US.¹²

Given the health impacts, mitigating climate change and adapting to extreme heat and other changes brought by climate change is a reproductive justice imperative:

- Pregnant people are more vulnerable to heat illness than other healthy people.¹³ Newborns are also less able to regulate their temperature than other people.¹⁴
- Studies show a link between exposure to high temperatures and adverse birth outcomes including preterm birth and low birth weight, which in turn are linked to developmental delays and are risk factors for infant morbidity and mortality, and stillbirth.¹⁵

- Warming temperatures mean more ground-level ozone can form. Ozone is one of the air pollutants that can cause respiratory illness in pregnant people and can lead to low birth weight or pre-term birth.¹⁶
- Increasing temperatures make it more likely wildfire seasons will last longer and be more intense in the US. Some contents of smoke from wildfires (which sometimes consume structures containing plastics and other chemicals) and the controlled burning sometimes used to prevent wildfires, has been linked to preterm birth.¹⁷
- Pregnant people are more at risk from the expanded geographic range of some vector-borne diseases because of increasing heat and humidity, including Zika virus and Lyme’ disease, which both impact pregnant people differently than non-pregnant people.¹⁸
- Pregnant people have increased needs for nutrition, but access to nutrition is imperiled by climate change. For example, rising temperatures will likely reduce how nutritious agricultural produce is, including through reducing protein and minerals like zinc and iron in major crops needed for healthy pregnancies.¹⁹ If future fish consumption patterns are unaltered, increasing ocean temperature would likely further increase mercury exposure in human diets. Methylmercury exposure can affect the development of children, particularly if exposed in utero.²⁰
- Pregnant people and people who have recently given birth are at an increased risk for severe stress and other negative mental health outcomes due to weather-related disasters associated with climate change.²¹ Pregnant or postpartum people may already be at higher risk of mental health illness than others.

Remembering Katrina and Maria: Disasters Linked to Climate Change Hit Women Harder

Climate change makes hurricanes hitting the Caribbean and the eastern coast of the US more destructive, an effect that will be disproportionately felt by women.²² During Hurricane Katrina, which devastated New Orleans and neighboring areas in 2005, women were less likely than men to be able to escape Hurricane Katrina or to cope afterwards. One study found that 25 percent of women in New Orleans were living under the poverty line, compared to 20 percent of men before the hurricane hit.²³ In the aftermath, young, single Black mothers were especially vulnerable to elevated health and mental health illnesses,²⁴ and the resultant affordable housing crisis impacted poor single mothers most significantly.²⁵ In Mississippi, domestic violence spiked.²⁶ In New Orleans, poor birth outcomes (birthweight and gestational age) were associated with exposure to Hurricane Katrina and its aftermath among pregnant women 5-7 years after the hurricane, indicating either direct effects or that individuals who are most vulnerable to disaster may also be more vulnerable to poor pregnancy outcomes.²⁷ In the aftermath of Hurricane Maria in Puerto Rico in 2017 pregnant women struggled to find care, including emergency obstetric care, and breastfeeding support systems were dysfunctional.²⁸

Rising Temperatures Will Hit Pregnant People of Color, Especially Those in Poverty, Hardest

Research has also found that increasing heat due to climate change is harming those with the least resources to protect themselves and their families the most. These communities often experience more exposure to heat and have the least resources to set up barriers to heat, such as air-conditioning. Some factors that can compound vulnerability include:

- **Racism:** Harms to health from the climate crisis in the US should be understood through the wider social and political context of structural racism, including unequal distribution of wealth and resources such as access to healthcare.²⁹ Discussions of climate change often miss or fail to center social justice concerns, even though extreme weather events, for example, result in uneven and unfairly distributed impacts, hitting those with the least resources, often communities of color, the hardest.³⁰ One study of preterm birth and exposure to heat found Black and

Asian mothers had larger impacts from heat exposure than white mothers. Another found that pregnant Black women had more hospitalizations due to heat exposure during their pregnancy than other women.³¹⁻³² Another study found that white or college-educated mothers faced lower rates of adverse birth outcomes from heat than others, most likely due to their high socioeconomic status and ability to obtain air-conditioning.³³ In the US, Black people and Native Americans have less air conditioning coverage, spend a greater proportion of their income on it when they do, and are more likely to live in poor quality housing than white people.³⁴ These inequities build on many years of environmental injustice for Black women. Social determinants of health, including residence in inner cities with higher exposure to air pollutants and long-term high levels of stress, are known to contribute to adverse obstetrical outcomes for Black women.³⁵ Research suggests that these environmental exposures exacerbate stressors.³⁶ Failure to center addressing racism in plans for climate health adaptation now risks exacerbating the impact of historical and existing disregard for Black and brown lives and their health.

- **“Microclimates”:** Researchers across the US are finding that in poorer urban neighborhoods, often where ethnically marginalized groups live, temperatures are higher because, for example, there are fewer trees that provide shade and more buildings and roads that capture heat.³⁷ One study found that land surface temperatures in redlined areas (neighborhoods adversely impacted by the racially discriminatory government policy of redlining) are on average, 2.6 degrees C warmer than in non-redlined areas and in some cities, as high as 7 degrees C warmer. In some cities, neighborhoods with higher temperatures already have high rates of preterm birth and low birth weight. Despite this, pregnant people’s needs, and pregnant people as a group, are often not included in city heat plans.³⁸
- **Labor:** People who work outside, like construction workers and farmworkers, are exposed to more heat.³⁹ Pregnant farmworkers in the US may have even less negotiating power than other workers to get accommodations from supervisors, such as being allowed to avoid heat or take extra breaks. While 30 states and 5 cities provide protections for pregnant workers in need of accommodation,⁴⁰ there is no federal law that provides an explicit right to pregnancy accommodations, though one – the Pregnant Workers Fairness Act – has been introduced in every Congress since 2012. The impact of pesticides on health, including possibly for pregnancy health, may worsen with increasing heat.⁴¹ There is no federal heat standard protecting workers from excessive heat and providing them with protective access to rest, shade, water, training, and protective clothing.⁴²

TAKING ACTION

Governments have human rights obligations to protect people from the health harms of climate change, including by adequately funding preparations that include different communities, are tailored to their needs, and are designed to protect the most vulnerable without discrimination. The US should urgently strengthen its climate change policies to reduce emissions in line with the best available science, which requires aligning its emissions reduction targets with the imperative to keep the increase of global average temperature as low as possible and no higher than 1.5 degrees C above pre-industrial levels. Congress should increase funding for health adaptation to the climate crisis, pass federal heat protections for all workers, and pass the Pregnant Workers Fairness Act so that pregnant workers have an explicit right to accommodations, including accommodations to prevent heat-related illnesses during pregnancy.

What Can Local Governments Do?

- Raise awareness, for example through posters or leaflets, that pregnant people are an important at-risk group for heat illness and that exposure to heat is linked to adverse birth outcomes. They should also provide advice around protection from heat and dehydration; and ensure that public websites providing information about heat illness make clear that pregnant people are an important at-risk group. Public information about heat harms, and other health impacts of climate change, should also educate people about the causes of global warming.
- Ensure pregnant people have access to cooling, such as air conditioning and cooler housing, including through energy assistance programs and tax rebate programs. Other protections could include banning utility companies from disconnecting electricity to any household during periods of dangerous temperatures and promoting local laws that ensure property owners provide cooling during the hottest months.

- Expand greenspaces in urban areas and take other rights-respecting action to cool cities down. Increased tree cover, for example, reduces temperatures, and planning for tree planting and tree coverage maintenance should include consideration of where birth rates and adverse birth outcomes are highest as well as other vulnerabilities to heat.
- Make sure that the specific needs of pregnant people are included in disaster planning, including but not limited to heat waves. For example, improve knowledge about access to cooling centers and ensure they are welcoming for pregnant people. Contraceptive choice, emergency obstetric care, and breastfeeding support should be available in the aftermath of extreme weather events such as hurricanes and flooding.
- Ensure workplace protections are in place for pregnant workers, including a right to pregnancy accommodations.
- Enforce and provide education about existing local and state pregnancy accommodations to uphold workers' rights.

Coercion Trap: Fertility control is not reproductive justice

Occasionally, some people have argued that fertility control should be used to fight climate change or loss of biodiversity. More regularly, commentators say that lower population is an important side-effect of widespread access to contraception. Policies should presume access to contraception and sexual health is a good in itself and should avoid any instrumentalization of contraception for other goals. Some population control efforts have been coercive or targeted women or groups for population control because they were viewed as undesirable people. Contemporary population reduction advocates emphasize that their aims are solely to ensure universal access to family planning, but governments should ensure that rightful concern about climate change does not lead to pressure on women or increased stigma directed at large families or at people living in poverty, communities of color or other marginalized groups. Coercion in family planning occurs on a spectrum and may be more common than widely believed.⁴³

What Can Health Providers Do?

- Provide information to pregnant people and their families about the importance of protecting themselves from high temperatures and staying hydrated. Check in with pregnant people during heat waves or send health reminders.⁴⁴
- Educate their patients that pregnancy puts the mother and developing child at increased risk to adverse health effects of heat exposure and on what measures that can be taken to help prevent these effects such as increased frequency of rest, water, and cooling breaks.
- Educate themselves about environmental health, the impact of climate change on the health of their communities, provide information to patients and others and advocate for a healthy environment as a major constituent of human health and wellbeing. Midwives, nurses, and doctors, as well as doulas serving their own communities are some of the most trusted sources of information in the US.
- Ask pregnant people about their work and exposure to heat. Provide letters to employers to help workers access reasonable workplace accommodations.

LIST OF RESOURCES:

Reproductive Justice:

SisterSong: <https://www.sistersong.net/reproductive-justice>

Black Women's Health Imperative: <https://bwhi.org/>

In Our Own Voice, National Black Women's Reproductive Justice Agenda: <https://blackrj.org/>

National Latina Institute for Reproductive Justice: <https://www.latinainstitute.org/>

Asuncion Valdivia Heat Illness and Fatality Prevention Act of 2019:

<https://www.congress.gov/bill/116th-congress/house-bill/3668>

Pregnant Workers Fairness Act: <https://www.abetterbalance.org/our-campaigns/pregnant-workers-fairness/>

National Climate Assessment 4: <https://nca2018.globalchange.gov/>

American Public Health Association: Climate Change, Health and Equity:

A Guide for Local Health Departments:

[https://www.apha.org/-/media/files/pdf/topics/climate/climate_health_equity.ashx?](https://www.apha.org/-/media/files/pdf/topics/climate/climate_health_equity.ashx?la=en&hash=14D2F64530F1505EAE7AB16A9F9827250EAD6C79)

[la=en&hash=14D2F64530F1505EAE7AB16A9F9827250EAD6C79](https://www.apha.org/-/media/files/pdf/topics/climate/climate_health_equity.ashx?la=en&hash=14D2F64530F1505EAE7AB16A9F9827250EAD6C79)

¹ Nick Watts et al., "The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come," *The Lancet* vol. 392, no. 10163 (2018): pp. 2479-2514, doi:10.1016/S0140-6736(18)32594-7; and Office of the United Nations High Commissioner for Human Rights, Analytical study on gender-responsive climate action for the full and effective enjoyment of the rights of women, U.N. Doc. A/HRC/41/26, May 1, 2019, <https://www4.unfccc.int/sites/SubmissionsStaging/Documents/201905102051--OHCHR%20Submission%20to%20the%20UNFCCC%200n%20to%20the%20Gender%20Action%20Plan.pdf>.

² Jessica Semega, "Pay is Up. Poverty is Down. How Women are Making Strides," US Census Bureau, Payday, Poverty, and Women, September 10, 2019, <https://www.census.gov/library/stories/2019/09/payday-poverty-and-women.html> (accessed October 1, 2020); and Scott Horsley, "Women Are Losing More Jobs In Coronavirus Shutdowns," *NPR Morning Edition*, April 8, 2020, https://www.npr.org/2020/04/08/829141182/women-are-losing-more-jobs-in-coronavirus-shutdowns?utm_medium=RSS&utm_campaign=news (accessed October 1, 2020).

³ Single parents in the US more likely to be women. See: "Caregiver Statistics: Demographics," Family Caregiver Alliance, <https://www.caregiver.org/caregiver-statistics-demographics> (accessed October 1, 2020); and "Single Mother Statistics," Single Mother Guide, last updated August 29, 2020, <https://singlemotherguide.com/single-mother-statistics/> (accessed October 1, 2020).

⁴ International Covenant on Civil and Political Rights (ICCPR), adopted December 16, 1966, G.A. Res. 2200A (XXI), 21 U.N. GAOR Supp. (No. 16) at 52, U.N. Doc. A/6316 (1966), 999 U.N.T.S. 171, entered into force March 23, 1976, ratified by the United States on June 8, 1992; International Convention on the Elimination of All Forms of Racial Discrimination (ICERD), adopted December 21, 1965, G.A. Res. 2106 (XX), annex, 20 U.N. GAOR Supp. (No. 14) at 47, U.N. Doc. A/6014 (1966), 660 U.N.T.S. 195, entered into force January 4, 1969, ratified by the US on October 21, 1994; and Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), adopted December 18, 1979, G.A. Res. 34/180, 34 U.N. GAOR Supp. (No. 46) at 193, U.N. Doc. A/34/46, entered into force September 3, 1981. Prohibited discrimination includes the unwarranted disparate impact of policies.

⁵ International Covenant on Economic, Social and Cultural Rights (ICESCR), adopted December 16, 1966, G.A. Res. 2200A (XXI), 21 U.N. GAOR Supp. (No. 16) at 49, U.N. Doc. A/6316 (1966), 993 U.N.T.S. 3, entered into force January 3, 1976, art. 12. See also UN Committee on Economic, Social, and Cultural Rights, General Comment No. 14, The right to the highest attainable standard of health, U.N. Doc E/C.12/2000/4 (2000).

⁶ "Mental Health and Well-Being" in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, US Global Change Research Program, 2016, <https://health2016.globalchange.gov/mental-health-and-well-being> (accessed October 1, 2020).

⁷ "Temperature Changes in the United States" in *Climate Science Special Report* (Volume 1 of the Fourth National Climate Assessment), US Global Change Research Program, 2017, <https://science2017.globalchange.gov/chapter/6/> (accessed October 1, 2020).

⁸ Ibid.

⁹ Steven C. Sherwood and Matthew Huber, "An adaptability limit to climate change due to heat stress," *Proceedings of the National Academy of Sciences* vol. 107, no. 21 (May 2010): pp. 9552-9555, doi:10.1073/pnas.0913352107

¹⁰ Alan Buis, "A Degree of Concern: Why Global Temperatures Matter," NASA's Global Climate Change Website, June 19, 2019, <https://climate.nasa.gov/news/2865/a-degree-of-concern-why-global-temperatures-matter/> (accessed October 1, 2020).

¹¹ See Steven C. Sherwood and Matthew Huber, "An adaptability limit to climate change due to heat stress," *Proceedings of the National Academy of Sciences* vol. 107, no. 21 (2010): pp. 9552-9555, doi:10.1073/pnas.0913352107; and Elizabeth G. Hanna and Peter W. Tait, "Limitations to Thermoregulation and Acclimatization Challenge Human Adaptation to Global Warming," *International Journal of Environmental Research and Public Health* vol. 12, no. 7 (2015): pp. 8034-8074, doi:10.3390/ijerph120708034; and Intergovernmental Panel on Climate Change, "Global Warming of 1.5 °C," 2019, <https://www.ipcc.ch/sr15/> (accessed October 1, 2020).

¹² Union of Concerned Scientists, "Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days," July 2019, <https://www.ucsusa.org/sites/default/files/attach/2019/07/killer-heat-analysis-full-report.pdf> (accessed October 1, 2020).

¹³ For example, see, The National Institute for Occupational Safety and Health (NIOSH), "Reproductive Health and the Workplace," Centers for Disease Control and Prevention (CDC), last updated April 20, 2017, <https://www.cdc.gov/niosh/topics/repro/heat.html> (accessed October 1, 2020).

¹⁴ For example, see Xavier Basagaña, et al., "Heat waves and cause-specific mortality at all ages," *Epidemiology* vol. 22, no. 6 (2011): pp. 765-772, doi:10.1097/EDE.0b013e31823031c5; and Olivier Deschênes and Michael Greenstone, "Climate Change, Mortality, and Adaptation: Evidence from Annual Fluctuations in Weather in the US," *American Economic Journal: Applied Economics* vol. 3, no. 4 (2011): pp. 152-85, doi:10.1257/app.3.4.152. See also studies on infant death and heat: Rupa Basu, Dharshani Pearson, Lillian Sie, and Rachel Broadwin, "A Case-Crossover Study of Temperature and Infant Mortality in California," *Paediatric and Perinatal Epidemiology* vol. 29, no. 5 (2015): pp. 407-415, doi: 10.1111/ppe.12204; and Leah H Schinasi, et al., "High Ambient Temperature and Infant Mortality in Philadelphia, Pennsylvania: A Case-Crossover Study," *American Journal of Public Health* vol. 110, no. 2 (2020): pp. 189-195, doi:10.2105/AJPH.2019.305442.

¹⁵ Bruce Bekkar, MD; Susan Pacheco, MD; Rupa Basu, PhD; Nathaniel DeNicola, MD, MSHR, "Association of Air Pollution and Heat Exposure With Preterm Birth, Low Birth Weight, and Stillbirth in the US: A Systematic Review," *JAMA Network Open* vol. 3, no. 6 (2020), doi:10.1001/jamanetworkopen.2020.8243; and Leeann Kuehn and Sabrina McCormick, "Heat Exposure and Maternal Health in the Face of Climate Change," *International Journal of Environmental Research and Public Health* vol. 14, no. 8 (2017): p. 853, doi:10.3390/ijerph14080853.

¹⁶ "Climate Change and the Health of Pregnant Women," US Environmental Protection Agency, <https://nepis.epa.gov/Exec/tiff2png.cgi/P100OW3R.PNG?r=75+g+7+D%3A%5CZYFILES%5CINDEX%20DATA%5C16THRU20%5CTIFF%5C0000168%5CP100OW3R.TIF> (accessed October 1, 2020); and "Special Focus: Climate Change and Pregnant Women," Center for Climate Change and Health and Public Health Institute, <http://climatehealthconnect.org/wp-content/uploads/2016/09/PregnantWomen.pdf> (accessed October 1, 2020).

- ¹⁷ “Chapter 6: Forests” in *Fourth National Climate Assessment: Volume II: Impacts, Risks, and Adaptation in the United States*, US Global Change Research Program, 2020, <https://nca2018.globalchange.gov/chapter/6/> (accessed October 1, 2020); “Chapter 13: Air Quality” in *Fourth National Climate Assessment: Volume II: Impacts, Risks, and Adaptation in the United States*, US Global Change Research Program, 2020, <https://nca2018.globalchange.gov/chapter/13/#key-message-2> (accessed October 1, 2020). Ozone and PM_{2.5} are both included in wildfire smoke.
- ¹⁸ All of these are included in CDC warnings for pregnant people. See: “Dengue During Pregnancy,” CDC, last updated October 31, 2019, <https://www.cdc.gov/dengue/transmission/pregnancy.html> (accessed October 1, 2020); “Lyme Disease,” CDC, January 1, 1991, <https://wonder.cdc.gov/wonder/prevguid/p0000380/p0000380.asp#head0010060000000000> (accessed October 1, 2020); and “Zika: Pregnancy,” CDC, last updated May 9, 2019, <https://www.cdc.gov/zika/pregnancy/index.html> (accessed October 1, 2020).
- ¹⁹ “Food Safety, Nutrition, and Distribution” in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, US Global Change Research Program, 2016, https://s3.amazonaws.com/climatehealth2016/high/ClimateHealth2016_07_Food.pdf (accessed October 1, 2020), p. 197. US Preventive Services Task Force, “Iron Deficiency Anemia in Pregnant Women: Screening and Supplementation,” March 30, 2015, <https://www.uspreventiveservicestaskforce.org/uspstf/document/evidence-summary22/iron-deficiency-anemia-in-pregnant-women-screening-and-supplementation> (accessed October 1, 2020); M. R. Smith, C. D. Golden, and S. S. Myers, “Potential rise in iron deficiency due to future anthropogenic carbon dioxide emissions,” *GeoHealth* vol. 1, no. 6 (2017): pp. 248-257, doi:10.1002/2016GH000018; and “Climate Change & Nutrition,” Center for Climate, Health, and the Global Environment, Harvard T.H. Chan School of Public Health, <https://www.hsph.harvard.edu/c-change/subtopics/climate-change-nutrition/> (accessed October 1, 2020).
- ²⁰ “Food Safety, Nutrition, and Distribution” in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, US Global Change Research Program, p. 197.
- ²¹ Mental Health and Well-Being” in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*.
- ²² National Climate Assessment, “Could climate change make Atlantic hurricanes worse?” Climate.gov, <https://www.climate.gov/news-features/climate-qa/could-climate-change-make-atlantic-hurricanes-worse> (accessed October 1, 2020).
- ²³ Barbara Gault, Heidi Hartmann, Avis Jones-DeWeever, Misha Werschkul, and Erica Williams, “The Women of New Orleans and the Gulf Coast: Multiple Disadvantages and Key Assets for Recovery Part I. Poverty, Race, Gender and Class,” Institute for Women’s Policy Research Briefing Paper, Publication No. D464, October 2015, http://www.ncdsv.org/images/IWPR_WomenOfNOGulfCoastMultipleDisadvantagesKeyAssetsForRecovery_Part_10-2015.pdf (accessed October 1, 2020). See also: “Hurricane Harvey Affects Women More Than Men & Here’s Why,” Institute for Women’s Policy Research, August 29, 2017, <https://iwpr.org/media/press-hits/hurricane-harvey-affects-women-men-heres/> (accessed October 1, 2020).
- ²⁴ Jean Rhodes, et al., “The impact of Hurricane Katrina on the mental and physical health of low-income parents in New Orleans,” *American Journal of Orthopsychiatry* vol. 80, no. 2 (2010): p. 237, doi: 10.1111/j.1939-0025.2010.01027.x; “Low-income, African American, single mothers were at particularly high risk for suffering these adverse effects.” For additional information, see Francis Adeola, “Katrina cataclysm: Does duration of residency and prior experience affect impacts, evacuation, and adaptation behavior among survivors?” *Environment and Behavior* vol. 41, no. 4 (2009): pp. 459-489; and Institute for Women’s Policy Research, “Women in the Wake of the Storm: Examining the Post-Katrina Realities of the Women of New Orleans and the Gulf Coast,” 2008, <https://vawnet.org/sites/default/files/materials/files/2016-08/D481.pdf> (accessed October 1, 2020).
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- ²⁶ Institute for Women’s Policy Research, “Women, Disasters, and Hurricane Katrina,” Fact Sheet D492, August 2010, <https://iwpr.org/wp-content/uploads/2020/09/D492.pdf> (accessed October 1, 2020).
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- ³⁰ Erik Swynedouw, “Apocalypse forever?” *Theory, Culture & Society* vol. 27, no. 2-3 (2010), pp. 213-232, doi:10.1177/0263276409358728.
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- ³² Rupa Basu, Brian Malig, and Bart Ostro, “High Ambient Temperature and the Risk of Preterm Delivery,” *American Journal of Epidemiology* vol. 172, issue 10 (2010): pp. 1108-1117, doi:10.1093/aje/kwq170.
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- ³⁸ Human Rights Watch review of heat emergency plans and associated documents for 18 cities in the US, including the 15 most populous found mention of pregnant people in only 2 cities.
- ³⁹ For example, see Public Citizen, “Extreme Heat and Unprotected Workers: Public Citizen Petitions OSHA to Protect the Millions of Workers Who Labor in Dangerous Temperatures,” July 17, 2018, https://www.citizen.org/wp-content/uploads/migration/extreme_heat_and_unprotected_workers.pdf (accessed February 21, 2020); and Kevin Riley, Holly Wilhalme, Linda Delp, and David P. Eisenman, “Mortality and Morbidity during Extreme Heat Events and Prevalence of Outdoor Work: An Analysis of Community-Level Data from Los Angeles County, California,” *International Journal of Environmental Research and Public Health* vol. 15, no. 4 (March 2018), doi:10.3390/ijerph15040580.
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- ⁴¹ “Food Safety, Nutrition, and Distribution” in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*.
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- ⁴³ Leigh Senderowicz, “‘I was obligated to accept’: A qualitative exploration of contraceptive coercion,” *Social Science & Medicine* vol. 239 (2019), doi:10.1016/j.socscimed.2019.112531.
- ⁴⁴ Guidance from “Special Focus: Climate Change and Pregnant Women,” Center for Climate Change and Health and Public Health Institute: “Talk to your patients about climate-related health risks, and advise them on how to minimize risks; Closely monitor pregnant patients during periods of extreme heat: assess their access to clean drinking water, shade or cooling centers, air conditioning, and social supports.”