

The impact of climate change on the health of people living in prison: a global scoping review

Gayathri Sasikumar, Marie Claire Van Hout and Emma Plugge

Abstract

Purpose – Climate change poses significant risks to people living in prison, who are particularly vulnerable due to confinement and limited agency. This study, a scoping review, aims to examine the extant literature on climate change-related impacts on prison health so as to identify key themes and research gaps.

Design/methodology/approach – A comprehensive search was conducted across multiple databases for peer-reviewed and grey literature. Studies were screened and data extracted following established scoping review methodologies. Thematic analysis was used to synthesise findings.

Findings – Twenty-three studies met the inclusion criteria. Key themes included: health vulnerability; infrastructure challenges, disaster preparedness and responses and human rights, environmental justice and sustainability. Critical gaps in empirical research are highlighted on the extent and diversity of climate change impacts on prisons, especially in low- and middle-income countries.

Originality/value – There is an urgent need for improved infrastructure and disaster preparedness in prisons and more data-driven studies. Addressing this complex issue requires interdisciplinary approaches integrating climate science, public health and criminal justice expertise. Policymakers and prison administrators must prioritise climate resilience and recovery measures to protect this vulnerable population.

Keywords Climate change, Prison health, People living in prison, Disaster preparedness, Environmental justice, Health in prison, Prisoners, Human rights

Paper type Literature review

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Introduction

There are 11.5 million people living in prison (PLP) on any given day globally, an increase of 17% since the start of the 21st century [Penal Reform International (2025); United Nations Office on Drugs and Crime (UNODC), 2023a]. People from poor, minority and Indigenous peoples and key populations, particularly vulnerable to human immunodeficiency virus (HIV) are disproportionately affected by incarceration [United Nations Office on Drugs and Crime (UNODC), 2021]. PLP face numerous environmental, social and health related challenges. Often coming from the poorest and most marginalised sectors of society, prior to imprisonment, they face poverty, social and racial exclusion, poor health and limited access to health services (Penal Reform International, 2025). Challenges whilst incarceration include overcrowding, poor and chronic ill health, inadequate healthcare provision, poor sanitation and limited access to resources. Minority and special groups of prisoners, including women (and their infants) and persons with chronic ill-health, experience substantial health vulnerability in prisons (Penal Reform International, 2025; Van Hout *et al.*, 2026).

The United Nations Standard Minimum Rules for the Treatment of Prisoners (the “Nelson Mandela Rules”) (United Nations, 2016) and the United Nations Rules for the Treatment of

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Women Prisoners and Non-Custodial Measures for Women Offenders (“the Bangkok Rules”) (United Nations, 2010) set out the norms and principles that underpin humane and dignified treatment of PLP and adequate standards of detention, emphasising the state’s responsibility to ensure the health and well-being of those under its care. Despite these norms, many prisons operate in conditions that fall short of international standards, potentially violating basic human rights (Penal Reform International, 2025). Prison overcrowding is a serious challenge worldwide, often leading to stretched resources and increased tension and violence among PLP and staff (Office of the High Commissioner for Human Rights, 2024; Penal Reform International (2023).

The connection between climate change and the health of PLP is an emerging area of concern (Cowan *et al.*, 2022). While climate change affects all populations, its health impacts are disproportionately borne by vulnerable groups (Campbell-Lendrum *et al.*, 2023; Sharpe and Davison, 2021; Romanello *et al.*, 2022). Extreme weather events, such as heatwaves, floods and storms exacerbated by climate change pose significant risks to prison infrastructure and the well-being of PLP [United Nations Office on Drugs and Crime (UNODC), 2023b]. Recent application of a climate risk mapping tool developed by the International Committee of the Red Cross (ICRC) (2023) has revealed that approximately a quarter of the 130,000 PLP in the Philippines are in areas at high risk of floods, drought, typhoons, landslides, heatwaves, earthquakes and volcanoes (ICRC, 2023). Similar vulnerabilities are likely to exist elsewhere. Madagascar and Malawi, for example, have been impacted by destructive weather events, destroying prison infrastructure (Southern Africa Litigation Centre, 2022; Van Hout *et al.*, 2024). Such events not only pose immediate risks to safety of PLP and prison staff but also longer-term risks as essential services, including healthcare access, food delivery, medicine supply and sanitation, are disrupted (Van Hout *et al.*, 2023). Whilst the vulnerability of PLP to the consequences of climate change has been recognised as a grave concern by the United Nations Office on Drugs and Crime (UNODC) (2023b), there is a significant gap in understanding the impact of climate change on the health of PLP. Hence, this scoping review maps and describes extant literature and identifies health and contextual vulnerabilities to inform climate responsive and resilient detention policies, systems and practice.

Methods

The central research question was:

RQ1. What is known in the literature about the impact of climate change on the health of PLP?

Three electronic databases, PubMed, Web of Science and CINAHL, were searched along with relevant organisational websites (e.g. World Health Organisation, ICRC). Search terms were grouped into two concepts relating to detention and climate change. These concepts were combined using Boolean operators (AND, OR). Forward and backward citation searching of included studies were conducted. See Table 1.

Table 1 Search terms	
Core concepts	Search terms
Detention	Prison*, incarcerat*, “correctional facilit*”, detention, gaol, jail, “penal institution*”, penitentiary, imprisonment
Climate change	“Climate change”, “greenhouse effect”, climate, “global warming”, “climatic change*”, “environmental change*”, “carbon emission*”, “climate disaster*”, “climat* variability”, weather, temperature, “temperature change”, “heat exposure”, “heat stress”, heat, “heat exhaustion”, heatwave*, season*, storm*, flood*, drought*, “forest fire*”, wildfire*, bushfire*, “extreme weather”, “extreme heat*”, tornado*, blizzard*, hail*, hurricane*, cyclon*, monsoon*, infrastructure

Search outputs were managed using EndNote. Authors 1, 2 and 3 screened the titles and abstracts of all records independently and in pairs. Records were included if they focused on PLP in any type of detention facility (prison, remand detention). Various aspects of climate change were considered, such as rising temperatures, sea-level rise, increased frequency and intensity of extreme weather events (e.g. heatwaves, floods, storms) and related environmental changes (e.g. air quality deterioration, water scarcity). Included records examined both direct health impacts (e.g. heat-related illnesses) and indirect impacts (e.g. food and water security). Full texts of included records were obtained and assessed by authors one and three independently and in pairs using the appropriate JBI checklist (JBI, 2024). Author provided a crosscheck, and where there were disagreements, consensus was reached through discussion. Records were charted [supplemental file *Charted Records*] and analysed thematically with three main themes identified:

1. health vulnerability;
2. infrastructure challenges; and
3. disaster preparedness and responses and human rights, environmental justice and sustainability.

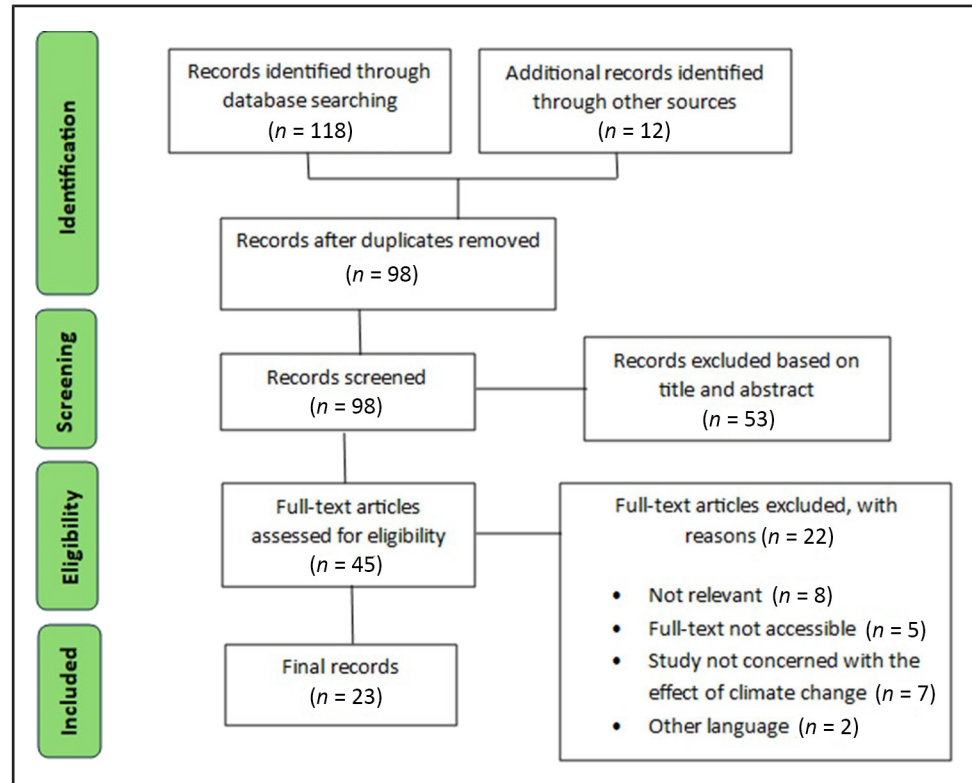
Results

The final data set consisted of the following. There were ten editorials (Taylor, 2024; Colucci *et al.*, 2023; Miller, 2023; Gribble and Pellow, 2021; Levenson, 2022; Smith *et al.*, 2022; Sullivan, 2022; Wu and Felder, 2021; Skarha *et al.*, 2022; Motanya and Valera, 2016), six quantitative studies (Glade *et al.*, 2024; Tuholske *et al.*, 2024; Cloud *et al.*, 2023; Cowan *et al.*, 2022; Skarha *et al.*, 2022; Mukherjee and Sanders, 2021), two opinion pieces (Maner *et al.*, 2022; Van Hout *et al.*, 2023), one systematic review (Glade *et al.*, 2022) one doctrinal analysis (Palacios and Vaughn, 2023) and one qualitative study (Le Dé and Gaillard, 2017). Most originated from the USA with some exceptions, for example, one qualitative study was conducted in New Zealand. With regard to grey literature, one report by Jesuit Social Services (2022) focused on Australia and one global perspective was provided by Penal Reform International (2021). See Figure 1.

This unique review was conducted in a systematic manner to ensure all relevant information was gathered. It included an assessment of the quality of studies, and therefore, the strength of the evidence. However, although individual studies were generally of high quality, the overall quality of evidence, when considered in the context of the “evidence pyramid” (Sackett *et al.*, 1996), is not strong because few were high-quality study designs. See supplemental file [Quality Assessment].

Health vulnerability

PLP are particularly vulnerable to climate change impacts due to their confinement and limited ability to protect themselves or safely remove themselves from harm. Motanya and Valera's review (2016) considered how natural disasters and extreme temperatures can adversely affect the health of PLP, underscoring the importance of emergency preparedness and evacuation plans. For example, Van Hout *et al.* (2023) emphasised that African prisons are typically overcrowded, lacking basic infrastructure and often excluded from domestic climate response planning. Over 13% of US counties are documented to be in the highest tertile for both incarceration and expected annual loss from natural hazards (Cowan *et al.*, 2022). The spatial analysis conducted by Glade *et al.* (2024) revealed that 75% of incarceration facilities in Colorado, US, are in elevated exposure for at least one hazard, indicating significant risk. Black and Hispanic or Latino individuals are identified as facing disproportionate risk (Glade *et al.*, 2024). Taylor (2024) examined carceral food insecurity and food justice in the US prisons, highlighting protests by PLP related to inadequate and unhealthy meals.

Figure 1 PRISMA flow diagram

Extreme temperatures emerged as a key concern. The lack of air conditioning and poor ventilation in many facilities exacerbates heat-related health risks for PLP (Tuholske *et al.*, 2024). In a US-based study, Tuholske *et al.* (2024) estimated that between 2016 and 2020, PLP experienced an average of 41.3 million person-days of potentially hazardous heat exposure, a measure that reflects the cumulative number of days individuals were exposed to high heat that could pose health risks. Colucci *et al.* (2023) highlighted the need for access to meteorological data in the USA to understand the relationship between thermal environments and the health of PLP. Skarha *et al.* (2022) found that heat above 85°F increased mortality risk by 0.7% in Texas prisons in the USA lacking air conditioning, while extreme heat days (defined as days above the 90th percentile heat index for the prison location) raised mortality risk by 15%. Approximately 13% of deaths in Texas prisons may be attributable to extreme heat. Elsewhere in the USA, Cloud *et al.* (2023) observed a 30% increase in daily suicide-watch incidents among incarcerated men in Louisiana state-operated prisons during extreme heat events. Mukherjee and Sanders (2021) using data from correctional facilities in Mississippi, USA, demonstrated an association between higher temperatures and increased violence among PLP. Smith *et al.* (2022) recognise and stress the urgent need for psychiatric support to address the mental health implications of the climate crisis for PLP globally.

Infrastructure challenges, preparedness and disaster responses

In addition to infrastructure improvements, the included records demonstrated a significant need for enhanced disaster preparedness, infrastructural resilience and climate, health and evacuation responses in prisons. The inadequacy of prison infrastructure to withstand contemporary climate-related stresses was a recurring theme. Levenson (2022), in the context of the US prisons, emphasised the urgent need

for improved infrastructure of detention facilities to withstand climate-related disasters. Recommended improvements include the installation of reliable air conditioning and ventilation systems, structural retrofitting to withstand extreme weather events and the provision of resilient power, water and cooling systems (Levenson, 2022). In terms of response measures, Maner *et al.* (2022) examined the lack of adequate emergency management and disaster response plans for PLP in the USA, highlighting the need for federal funding incentives and policy changes to require robust emergency management plans. In New Zealand, the lack of collaboration between stakeholders in disaster risk reduction and emergency management requires increased awareness and improved policies (Le Dé and Gaillard, 2017). Professionals from different disciplines are recommended to collaborate to address climate change impacts as a prison system priority, particularly in the context of emergency preparedness and response to natural disasters and extreme weather events (Motanya and Valera, 2016). Penal Reform International (2021) has issued guidelines for disaster risk reduction in prison settings, stressing the importance of training staff, using low-cost solutions and maximising community resources to enhance disaster preparedness and response in prisons.

Human rights, environmental justice and sustainability

Several records address the socio-legal and implications for strategic litigation based on climate change impacts on the health and safety of PLP. Sullivan (2022) discusses the US Eighth Amendment right to risk reduction, arguing that prisons have a duty to protect PLP from the harms related to climate change. Palacios and Vaughn (2023) analysed cases from the US appeal courts where PLP challenged their conditions in excessive heat in facilities. Miller (2023) explored “*climate carceralism*”, addressing the growth of prison labour in the USA due to climate change and proposing Eighth Amendment litigation to challenge unsafe working conditions. The impact of climate change on PLP is viewed within broader contexts of environmental justice and sustainability, demonstrating the need for a broad-based human rights-led approach to addressing climate change impacts affecting standards of detention. The Jesuit Social Services (2022) report argued that prisons are environmentally harmful and that building more is unsustainable, calling for “*decarceration*” and investing in community-based solutions.

The use of prison labour in disaster response efforts, including fighting wildfires and cleaning up oil spills, raises questions about environmental justice and the exploitation of PLP in climate-related labour. PLP working as firefighters were observed to face occupational environmental risks and need adequate protection (Gribble and Pellow, 2021).

Discussion

This scoping review is the first to comprehensively map and describe extant literature on the impact and consequences of climate change on PLP globally. It lays the foundation for future work worldwide, particularly in climate shock and economically disadvantaged affected regions, to bridge the gap and create equity in climate resilience between PLP and the general population. The review’s findings suggest that prison systems are ill-equipped to handle climate-related challenges of the future whilst often being sited in areas where they are more likely to experience the adverse effects of climate change. Infrastructure is unlikely to be able to deal with the increasing temperatures or frequency of natural disasters. Increasing temperatures are associated with many health problems, including heat exhaustion and heat stroke, dehydration and exacerbation of respiratory and mental health conditions. PLP are powerless to protect themselves or escape extreme heat. Whilst the evidence on

mortality and increasing temperatures is well-documented ([Intergovernmental Panel on Climate Change \(IPCC\), 2023](#)), a recent review examining sustainable cooling strategies in heat vulnerable settings did not mention detention settings ([Jay *et al.*, 2021](#)). The existing empirical evidence, which was generally of high quality, suggests alarming trends; the work of [Skarha *et al.* \(2022\)](#) and [Cloud *et al.* \(2023\)](#) showed significant increases in mortality risk and suicide-watch incidents during heat events. [Mukherjee and Sanders \(2021\)](#) found an association between increased violent behaviour and higher temperatures.

There was a scarcity of original research studies, and whilst climate change affects every country, yet most studies were US-based. This geographic bias is concerning given that many low- and middle-income countries (LMICs) are likely to face the most severe impacts of climate change ([Sharpe and Davison, 2021](#)), often lack resilient infrastructure and house a significant proportion of the world's prison population ([Penal Reform International, 2025](#)). Ironically, these countries have contributed least to global emissions. If research from high-income countries is already highlighting major issues, it is reasonable to infer that the impacts on PLP in LMICs will be considerably worse. Research focused on LMICs is not just beneficial but an issue of justice. The spatial analyses by [Glade *et al.* \(2024\)](#) and [Cowan *et al.* \(2022\)](#) provide valuable quantitative insights into the geographic vulnerability of detention facilities to climate-related hazards, demonstrating that many facilities are in high-risk areas, compounding the vulnerability of PLP. This is supported by studies in New Zealand ([Le Dé and Gaillard, 2017](#)).

The review highlights the significant gaps in disaster preparedness, resilience, response and recovery in detention settings. The lack of adequate emergency management plans ([Maner *et al.*, 2022](#)) and the insufficient collaboration between stakeholders ([Le Dé and Gaillard, 2017](#)) point to critical areas for improvement. This sub-optimal preparedness aligns with poor preparedness in prison during the COVID-19 pandemic: in Europe ([World Health Organisation, 2023](#)) and Africa ([Van Hout, 2023](#); [Muntingh, 2020](#)). There is an urgent need for high-quality quantitative studies, particularly modelling studies, to provide accurate numbers of climate-vulnerable PLP under different climate scenarios. Regions of the world where heating will be the most extreme should be prioritised; this will include many LMICs where, as evidenced by this global review, there is currently a dearth of research. Countries should develop an evidence-based understanding of the state of its prison infrastructure and the extent to which this will provide resilience to the impacts of climate change. This is likely to require a multidisciplinary approach involving public health experts, environmental health professionals, building engineers, prison authorities, health providers staff and PLP. Policy makers must act on this information, ensuring that government funding is deployed to detention setting infrastructure developments to mitigate the impact of the effects of climate change such as high temperatures. When considering the building of new facilities, the likely impact of climate change must inform decisions about where such facilities are sited; land prone to flooding, wild-fires or other natural hazards should be avoided.

This review, at the intersection of climate justice and criminal justice, serves as a call to action for researchers, policymakers and prison administrators worldwide to prioritise this issue by reducing reliance on incarceration through decongestion and decarceration, rather than expanding carceral infrastructure, while also ensuring that any remaining facilities are resilient, humane and just detention systems in the face of our changing climate ([Jesuit Social Services, 2022](#)). Decarceration should be viewed as a practical solution to the cumulative health risks associated with incarceration, especially in facilities situated in environmentally hazardous settings ([Purdum *et al.*, 2021](#); [Jesuit Social Services, 2022](#)).

Conclusion

The effect of climate change on already sub-optimal living conditions in many prisons worldwide raises serious public health and human rights concerns. Neglecting this threat raises serious legal, ethical and health issues. Health disparities are exacerbated by climate-related hazards, including extreme heat, flooding and wildfire, which disproportionately impact prison communities that lack the means to shift or adapt (Penal Reform International, 2021). The development of international standards setting out minimum standards for monitoring the impact of climate related events, for new infrastructure and adaptations for existing building to ensure climate resilience are warranted (Bosworth *et al.*, 2025). Detention settings must be included in all national disaster preparedness and recovery plans. At a local level, there should be training for detention staff (custodial and health) to develop their understanding of work-related climate change impacts and necessary adaptations, particularly safe evacuation planning and sustainable innovations to support temperature control, water supply and electricity.

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References

- Bosworth, R., Van Hout, M.C., Madroumi, R., Ricks, T., Dale, A., Batterham, M., Petrilli, L. and Calder, I. (2025), "A Delphi consensus study on international best practice to promote resilience, sustainability and safeguard prisons and prison communities against the consequences of climate change", *Environmental Justice*, doi: [10.1177/19394071251397151](https://doi.org/10.1177/19394071251397151).
- Campbell-Lendrum, D., Neville, T., Schweizer, C. and Neira, M. (2023), "Climate change and health: three grand challenges", *Nature Medicine*, Vol. 29 No. 7, pp. 1631-1638, doi: [10.1038/s41591-023-02438-w](https://doi.org/10.1038/s41591-023-02438-w).
- Cloud, D.H., Williams, B., Haardörfer, R., Brinkley-Rubinstein, L. and Cooper, H.L. (2023), "Extreme heat and suicide watch incidents among incarcerated men", *JAMA Network Open*, Vol. 6 No. 8, p. e2328380, doi: [10.1001/jamanetworkopen.2023.28380](https://doi.org/10.1001/jamanetworkopen.2023.28380).
- Colucci, A.R., Vecellio, D.J. and Allen, M.J. (2023), "Thermal (In)equity and incarceration: a necessary nexus for geographers", *Environment and Planning E: Nature and Space*, Vol. 6 No. 1, pp. 638-657, doi: [10.1177/25148486211063488](https://doi.org/10.1177/25148486211063488).
- Cowan, K.N., Peterson, M., LeMasters, K. and Brinkley-Rubinstein, L. (2022), "Overlapping crises: climate disaster susceptibility and incarceration", *International Journal of Environmental Research and Public Health*, Vol. 19 No. 12, p. 7431, doi: [10.3390/ijerph19127431](https://doi.org/10.3390/ijerph19127431).
- Glade, S., Niles, S., Roudbari, S., Pezzullo, P.C., Dashti, S., Liel, A.B. and Miller, S.L. (2022), "Disaster resilience and sustainability of incarceration infrastructures: a review of the literature", *International Journal of Disaster Risk Reduction*, Vol. 80, p. 103190, doi: [10.1016/j.ijdrr.2022.103190](https://doi.org/10.1016/j.ijdrr.2022.103190).
- Glade, S., Schmitz, C., Barron, B.N., Dashti, S., Roudbari, S., Liel, A.B., Pezzullo, P.C. and Miller, S.L. (2024), "Hazards and incarceration facilities: evaluating facility-level exposure to floods, wildfires, extreme heat, and landslides in Colorado", *Natural Hazards Review*, Vol. 25 No. 1, p. 04023047, doi: [10.1061/NHREFO.NHENG-1556](https://doi.org/10.1061/NHREFO.NHENG-1556).
- Gribble, E.C. and Pellow, D.N. (2021), "Climate change and incarcerated populations: confronting environmental and climate injustices behind bars", *Fordham Urban Law Journal*, Vol. 49 No. 2, pp. 341-370, available at: <https://ir.lawnet.fordham.edu/ulj/vol49/iss2/2>
- Intergovernmental Panel on Climate Change (IPCC) (2023), *Climate Change 2022: Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge.
- International Committee of the Red Cross (ICRC) (2023), "Asia: mapping a safer future for prisoners of climate change", available at: <https://blogs.icrc.org/inspired/2023/02/24/asia-philippines-mapping-safer-future-prisoners-climate-change/> (accessed 18 May 2024).

Jay, O., Capon, A., Berry, P., Broderick, C., De Dear, R., Havenith, G., Honda, Y., Kovats, R.S., Ma, W., Malik, A. and Morris, N.B. (2021), "Reducing the health effects of hot weather and heat extremes: from personal cooling strategies to green cities", *The Lancet*, Vol. 398 No. 10301, pp. 709-724, doi: [10.1016/S0140-6736\(21\)01209-5](https://doi.org/10.1016/S0140-6736(21)01209-5).

JBI (2024), "Critical appraisal tools", available at: <https://jbi.global/critical-appraisal-tools> (accessed 2 June 2024).

Jesuit Social Services (2022), "Prisons, climate and a just transition", available at: https://cdn.jss.org.au/wp-content/uploads/2022/01/06065414/Prisons-climate-just-transition_updated_2021_final.pdf (accessed 9 April 2024).

Le Dé, L. and Gaillard, J.C. (2017), "Disaster risk reduction and emergency management in prison: a scoping study from New Zealand", *Journal of Contingencies and Crisis Management*, Vol. 25 No. 4, pp. 376-381, doi: [10.1111/1468-5973.12165](https://doi.org/10.1111/1468-5973.12165).

Levenson, L.L. (2022), "Climate change and the threat to US jails and prisons", *Villanova Environmental Law Journal*, Vol. 33 No. 2, pp. 143-172, available at: <https://digitalcommons.law.villanova.edu/elj/vol33/iss2/1>

Maner, M., Behne, M.F., Cullins, Z., Cowan, K.N., Peterson, M. and Brinkley-Rubinstein, L. (2022), "Where do you go when your prison cell floods? Inadequacy of current climate disaster plans of US departments of correction", *American Journal of Public Health*, Vol. 112 No. 10, pp. 1382-1384, doi: [10.2105/AJPH.2022.307044](https://doi.org/10.2105/AJPH.2022.307044).

Miller, S. (2023), "Climate carceralism: the future of climate-linked prison labor", *Harvard Law Review*, Vol. 137 No. 2, pp. 706-727, available at: <https://harvardlawreview.org/print/vol137/climate-carceralism-the-future-of-climate-linked-prison-labor/>

Motanya, N.C. and Valera, P. (2016), "Climate change and its impact on the incarcerated population: a descriptive review", *Social Work in Public Health*, Vol. 31 No. 5, pp. 348-357, doi: [10.1080/19371918.2015.1137513](https://doi.org/10.1080/19371918.2015.1137513).

Mukherjee, A. and Sanders, N.J. (2021), "The causal effect of heat on violence: social implications of unmitigated heat among the incarcerated", *National Bureau of Economic Research*, available at: www.nber.org/papers/w28987

Muntingh, L. (2020), "Africa, prisons and COVID-19", *Journal of Human Rights Practice*, Vol. 12 No. 2, pp. 284-292, doi: [10.1093/jhuman/huaa031](https://doi.org/10.1093/jhuman/huaa031).

Office of the High Commissioner for Human Rights (2024), "A/HRC/55/52: current issues and good practices in prison management – Report of the special rapporteur on torture and other cruel, inhuman or degrading treatment or punishment", available at: www.ohchr.org/en/documents/thematic-reports/ahrc5552-current-issues-and-good-practices-prison-management-report (accessed 2 July 2024).

Palacios, J.E. and Vaughn, M.S. (2023), "Inmates with heat-sensitive health conditions: surveying prisoner litigation in the age of climate change", *Criminal Justice Review*, Vol. 50 No. 1, pp. 1-21, doi: [10.1177/07340168231166748](https://doi.org/10.1177/07340168231166748).

Penal Reform International (2021), "Natural hazards and prisons: protecting human rights of people in prison in disaster prevention, response and recovery", available at: https://cdn.penalreform.org/wp-content/uploads/2021/12/PRI_Natural_hazards_and_prisons_WEB.pdf (accessed 10 April 2024).

Penal Reform International (2023), "Global prison trends 2023", available at: <https://cdn.penalreform.org/wp-content/uploads/2023/06/GPT-2023.pdf> (accessed 19 May 2024).

Penal Reform International (2025), "Global prison trends 2025", London: Penal Reform International. Available from: www.penalreform.org/resource/global-prison-trends-2025/ (accessed 22 September 2025).

Purdum, C., Henry, F., Rucker, S., Williams, D.A., Thomas, R., Dixon, B. and Jacobs, F. (2021), "No justice, No resilience: prison abolition As disaster mitigation in an era of climate change", *Environmental Justice*, Vol. 14 No. 6, pp. 418-425, doi: [10.1089/env.2021.0020](https://doi.org/10.1089/env.2021.0020), (Original work published 2021).

Romanello, M., Di Napoli, C., Drummond, P., Green, C., Kennard, H., Lampard, P., Scamman, D., Arnell, N., Ayeb-Karlsson, S., Ford, L.B. and Belesova, K. (2022), "The 2022 report of the lancet countdown on health and climate change: health at the mercy of fossil fuels", *The Lancet*, Vol. 400 No. 10363, pp. 1619-1654, doi: [10.1016/S0140-6736\(22\)01540-9](https://doi.org/10.1016/S0140-6736(22)01540-9).

Sackett, D.L., Rosenberg, W.M., Gray, J.M., Haynes, R.B. and Richardson, W.S. (1996), "Evidence based medicine: what it is and what it isn't", *BMJ*, Vol. 312 No. 7023, pp. 71-72, doi: [10.1136/bmj.312.7023.71](https://doi.org/10.1136/bmj.312.7023.71).

Sharpe, I. and Davison, C.M. (2021), "Climate change, climate-related disasters and mental disorder in low- and Middle-income countries: a scoping review", *BMJ Open*, Vol. 11 No. 10, p. e051908, doi: [10.1136/bmjopen-2021-051908](https://doi.org/10.1136/bmjopen-2021-051908).

Skarha, J., Dominick, A., Spangler, K., Dosa, D., Rich, J.D., Savitz, D.A. and Zanobetti, A. (2022), "Provision of air conditioning and heat-related mortality in Texas prisons", *JAMA Network Open*, Vol. 5 No. 11, pp. 1-10, doi: [10.1001/jamanetworkopen.2022.39849](https://doi.org/10.1001/jamanetworkopen.2022.39849).

Smith, A., Ogunwale, A. and Liebrez, M. (2022), "The tip of the iceberg? Climate change, detention settings and mental health", *International Journal of Social Psychiatry*, Vol. 68 No. 7, pp. 1303-1306, doi: [10.1177/00207640221106690](https://doi.org/10.1177/00207640221106690).

Southern Africa Litigation Centre (2022), "Madagascar: prisoners are the invisible victims of the environmental crisis", available at: www.southernafricalitigationcentre.org/madagascar-prisoners-are-the-invisible-victims-of-the-environmental-crisis/ (accessed 18 July 2022).

Sullivan, M. (2022), "Prisons, immigration detention centers, and natural disasters: an eighth amendment right to risk reduction", *Texas Journal on Civil Liberty and Civil Rights*, Vol. 28, pp. 85-120, available at: <https://sites.utexas.edu/tjclcr/files/2023/05/Sullivan.-Prisons-Immigration-Detention-Centers-and-Natural-Diasters.pdf> (accessed 22 September 2025).

Taylor, D.E. (2024), "Prisons, jails, and the environment: why environmentalists should care about mass incarceration", *American Behavioral Scientist*, Vol. 68 No. 4, pp. 449-485, doi: [10.1177/00027642221142206](https://doi.org/10.1177/00027642221142206).

Tuholske, C., Lynch, V.D., Spriggs, R., Ahn, Y., Raymond, C., Nigra, A.E. and Parks, R.M. (2024), "Hazardous heat exposure among incarcerated people in the United States", *Nature Sustainability*, Vol. 7 No. 4, pp. 394-398, doi: [10.1038/s41893-024-01293-y](https://doi.org/10.1038/s41893-024-01293-y).

United Nations Office on Drugs and Crime (UNODC) (2021), "United nations system common position on incarceration", Vienna: United Nations Office on Drugs and Crime; 2021, available at: www.unodc.org/res/justice-and-prison-reform/nelsonmandelarules-GoF/UN_System_Common_Position_on_Incarceration.pdf (accessed 22 September 2025).

United Nations Office on Drugs and Crime (UNODC) (2023a), Data Matters Snapshot: Global Prison Population and Trends Nelson Mandela International Day, available at: www.unodc.org/documents/data-and-analysis/briefs/DataMatters_NM_Day_2023.pdf (accessed 24 May 2024).

United Nations Office on Drugs and Crime (UNODC) (2023b), "Prisoners matter: rights and needs of 11.2 million prisoners around the world must be respected, says UNODC executive director on Nelson Mandela day", available at: www.unodc.org/unodc/frontpage/2023/July/prisoners-matter_-rights-and-needs-of-11-2-million-prisoners-around-the-world-must-be-respected.html (accessed 30 May 2024).

United Nations (2010), "United nations rules for the treatment of women prisoners and Non-Custodial measures for women offenders (the Bangkok rules)", United Nations.

United Nations (2016), "Standard minimum rules for the treatment of prisoners (the Nelson Mandela rules)", United Nations.

Van Hout, M.C., Kaima, R., Mangwana-Mhango, A., Kasunda, V., Mhango, V., Ong, D. and Kewley, S. (2024), "'We fear for our lives': understanding, responding and mitigating the impact of climate change on the Malawian prison system", *Journal of Human Rights Practice*, Vol. 17 No. 1, doi: [10.1093/jhuman/huae039](https://doi.org/10.1093/jhuman/huae039).

Van Hout, M.C. (2023), "Using COVID-19 to address environmental threats to health and leverage for prison reform in South Africa, Malawi and Zimbabwe", *Journal of Human Rights Practice*, Vol. 15 No. 2, pp. 477-505, doi: [10.1093/jhuman/huac050](https://doi.org/10.1093/jhuman/huac050).

Van Hout, M.C., Johnson-Gomez, A., Madroumi, R., Calder, I., Frey, B. and Matonich, J. (2026), "Essential standards for perinatal care of women and children living in prison", *The Lancet Public Health*, Vol. 11 No. 3, doi: [10.1016/S2468-2667\(25\)00320-2](https://doi.org/10.1016/S2468-2667(25)00320-2).

Van Hout, M.C., Southalan, L., Kinner, S., Mhango, V. and Mhlanga-Gunda, R. (2023), "COVID-19, conflict, climate change, and the human rights of people living in African prisons", *The Lancet Planetary Health*, Vol. 7 No. 5, pp. e352-e353, doi: [10.1016/S2542-5196\(23\)00080-3](https://doi.org/10.1016/S2542-5196(23)00080-3).

World Health Organisation (2023), *Prisons and Other Places of Detention in Pandemic Preparedness Plans across the WHO European Region in the Context of the COVID-19 Pandemic*, WHO Regional Office for Europe, Copenhagen.

Wu, P. and Felder, D.K. (2021), "Hell and high water: how climate change can harm prison and jail residents, and why COVID-19 conditions litigation suggests most federal courts will wait-and-see when asked to intervene", *Fordham Urban Law Journal*, Vol. 49 No. 2, pp. 259-340, available at: <https://ir.lawnet.fordham.edu/ulj/vol49/iss2/1>

Supplementary material

The supplementary material for this article can be found online.

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