

UNITED STATES

LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE
DATA SHEET 2023

Health and climate change in the U.S.

The *Lancet* Countdown on Health and Climate Change is an academic collaboration of over 200 researchers from around the world, which annually takes stock of the evolving links between health and climate change through 40+ peer-reviewed indicators. Since 2016, these indicators have provided regular, reliable global and regional stocktakes on climate change and health. This document summarises key findings from the 2023 Report of the *Lancet* Countdown* for the U.S., which reveal that:



Populations are increasingly exposed to **health-threatening extreme heat**, with associated increases in heat-related illness and mortality.



Air pollution is affecting the health of local populations, with a high burden of disease and deaths that could be avoided by transitioning to zero-emission, clean energy sources.



The persistent net **subsidising of fossil fuels** for billions of dollars restricts funds available for health-supportive services, and hampers a transition towards clean, zero-emission energy.



Climatic conditions have grown increasingly suitable for the spread of **vector-borne diseases** including dengue and malaria.

These findings underline the urgency of strengthening local health systems, adapting to climate change, and pursuing efforts to reduce greenhouse gas emissions through interventions that simultaneously deliver health co-benefits. These actions will help build healthier, more resilient populations, and forge the way to a thriving future for the U.S.

Heat and health

Exposure to high temperatures threatens people's lives, health, and wellbeing, leading to death and heat-related disease, and increasing healthcare demand during heatwave episodes. Older people, communities experiencing income inequality and structural racism, very young children, pregnant women, and those with underlying health problems are particularly at risk.

2.3°F

2022 was the warmest year ever recorded in the U.S. Average U.S. summer temperatures in 2022 were 2.3°F (1.3°C) warmer as compared to 1986-2005 (indicator 1.1.1).

138%

Adults over age 65 years experienced a 138% increase in total exposure to heatwaves annually (172 million more person-days) in 2013-2022 compared to the same demographic in 1986-2005, meaning that each older adult, on average, was exposed to an additional 2.8 heatwave days per year as compared to the historical baseline.

61%

U.S. infants under 1 year experienced a 61% increase in total exposure to heatwaves (19 million more person-days), meaning that each infant, on average, was exposed to an additional 3.2 heatwave days per year from 2013-2022 compared to 1986-2005 (indicator 1.1.2).

Green space promotes numerous health benefits and reduces heat exposure.



In a study of 49 U.S. urban centers, 25 were classified as having moderate or higher levels of greenness in 2022. This was a decline from 30 urban centers with moderate or higher greenness in 2015 (indicator 2.2.3).

ECONOMIC IMPACT OF HEAT

Heat exposure limits labour productivity, which undermines livelihoods and the social determinants of health.

2.9 billion

potential labour hours lost due to heat exposure in 2022, an increase of 54% from 1991-2000 (indicator 1.1.4).

US\$81 billion

potential loss of income from reduced labor due to extreme heat. 45% of the losses occurred in the construction industry (indicator 4.1.3).

Heat and health

88%

Among adults 65 years and older, heat-related mortality is estimated to have increased 88% in 2018-2022 compared to 2000-2004. In the absence of climate change-induced temperature increases, heat-related mortality would have been expected to increase only 25% across this period (indicator 1.1.5).

\$11bn

In 2022, the monetized value of these heat-related deaths in adults 65 years and older in the U.S. was estimated to be more than \$11 billion (indicator 4.1.2).

FUTURE PROJECTIONS

3.7°F (2°C) SCENARIO

In a scenario in which temperatures are kept to under 3.7°F (2°C) of heating, heatwave exposure for people over age 65 is projected to be 5 times greater by mid-century (2041-2060 average) (indicator 1.1.2).

Vulnerability to infectious diseases

The suitability for transmission of many infectious diseases, including vector-borne, food-borne, and water-borne diseases, is influenced by shifts in temperature and precipitation associated with climate change.



The ability of *Aedes aegypti* – the mosquito that can carry the dengue virus – to transmit dengue had more than doubled in 2013-2022 compared to 1951-1960 in the U.S. (as defined by the basic reproductive number, R₀). It is now greater than 1, signifying the potential for the disease to spread (indicator 1.3).



The transmission season for *Plasmodium falciparum* and *Plasmodium vivax* – two parasites that cause malaria – lengthened by 39% and 33.7%, respectively, in U.S. lowland areas in 2013-2022 compared to 1951-1960 (indicator 1.3).



9%

9.3% of total U.S. coastline was suitable for *Vibrio* transmission at any one point in 2022. This was 44.4% higher than average suitability from 1982-2010 (indicator 1.3).

Drought and health

Droughts can impact crop yields and livestock, increasing the risk of food insecurity and malnutrition. They can also affect water security, impair sanitation, and increase the risk of infectious disease transmission.



The amount of land classified as experiencing at least three months of extreme drought per year increased 22% from 1951-1960 to 2013-2022. In 2022, 11% of U.S. land area experienced over 3 months of extreme drought (indicator 1.2.2).

Air pollution and health impacts

The low adoption of clean renewable energy and the continued use of fossil fuels and biomass lead to high levels of air pollution, which increases the risk of respiratory and cardiovascular disease, lung cancer, diabetes, neurological disorders, adverse pregnancy outcomes, and leads to a high burden of disease and mortality. All of these lead to increasing demand on care services.

41.5%

In 2020, fossil fuel combustion accounted for approximately 41.5% of all premature deaths attributable to human-caused fine particulate matter (PM_{2.5}) in the U.S. (indicator 3.2.1).



The monetized value of premature deaths from PM_{2.5} in 2020 was estimated to be \$151 billion (indicator 4.1.4).



In 2021, the U.S. was one of the five leading emitters of primary PM_{2.5}, by both production- and consumption-based accounting, contributing 2.9% of the world's production-based PM_{2.5} emissions and 5.2% of the world's consumption-based PM_{2.5} emissions (indicator 4.2.5).



In 2021, the U.S. was the second-highest emitter of CO₂ by both production- and consumption-based accounting, contributing 13.4% and 16.0% of the world's production- and consumption-based CO₂ emissions, respectively (indicator 4.2.5).

Sea level rise and health

Sea level rise can affect human health through episodic flooding, permanent inundation, erosion, soil and drinking water contamination, vector- and water-borne disease, and mental health impacts, with populations living less than 3 feet above sea level particularly vulnerable.



In 2022, 1.78 million people lived less than 3 feet above current sea levels (indicator 2.3.3).

Without sufficient adaptation measures, sea level rise could prompt relocation of vulnerable populations. The health impacts of human relocation will depend on the policies put in place to protect the health of migrant or immobile populations.

Energy transition and health co-benefits

Transitioning energy systems to renewables would benefit human health, simultaneously reducing air pollution; mitigating greenhouse gas emissions; and contributing towards universal, affordable, and clean energy.



Renewable energy accounted for less than 3% of total energy supply in the U.S. in 2020, an increase over previous years. Coal use, while declining, accounted for 11% of total energy supply in 2020 (indicator 3.1.1).



The percentage of total electricity-driven transportation in the U.S. increased from 0.03% to 0.1% between 2015 and 2020. Since the Paris Agreement was adopted in 2015, fossil fuel usage as a percentage of total U.S. transport energy has remained steady at 93% (indicator 3.1.3).

FOSSIL FUEL FINANCE BY THE NUMBERS

U.S. banks are global leaders in fossil fuel sector lending, while green sector lending reached an all-time high in 2021.



Between 2017-2021, four U.S. banks (Citi, Bank of America, JP Morgan, Wells Fargo) lent over \$761 billion dollars to the fossil fuel sector (average of \$152 billion per year), together accounting for 27% of worldwide bank lending to that industry (indicator 4.2.7).



Between 2017-2021, three U.S. banks (Citi, Bank of America, JP Morgan) lent more than \$170 billion dollars to the green sector (average of \$34 billion per year). Their lending to the green sector steadily increased over the past 12 years, reaching an all-time high of \$76 billion in 2021 (indicator 4.2.7).



Over the past 12 years, JP Morgan was the leading U.S. bank lender to the fossil fuel sector, lending 8.2 times more to the fossil fuel sector than to the green sector (indicator 4.2.7).

Fossil fuel company production strategies are out of line with the Paris Agreement and U.S. climate targets.



As of February 2023, ExxonMobil's planned operations would generate 55% more GHG emissions than would be compatible with their annual share of an "emissions budget" aligned with 1.5°C of average global heating in 2030. In 2040, expected emissions would rise to 217% more than a 1.5°C emissions budget (indicator 4.2.6).

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WWW.LANCETCOUNTDOWN.ORG

*Romanello M, di Napoli C, Green C et al. The 2023 report of the *Lancet* Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms. *Lancet* 2023; published online Nov 14. [https://doi.org/10.1016/S0140-6736\(23\)01859-7](https://doi.org/10.1016/S0140-6736(23)01859-7).