



Climate Change, Extreme Heat, and Health

Why is climate change important to public health?

Climate change is altering weather and climate patterns which could affect human health in direct and indirect ways, sometimes severely.^{3 5} Climate change is one of the most serious public health threats facing us today according to the American Public Health Association and World Health Organization.^{1 2}

What can decision makers do to mitigate the effects of extreme heat?

- Work with other decision makers to reduce climate change. It is imperative that we reduce emissions as quickly as possible and simultaneously prepare for the changes we cannot prevent.¹⁷
- Engage all state agencies in determining how environmental justice screening tools can assist them in designing better information gathering, outreach, engagement, and decision-making processes to reduce existing and future impacts to residents (this includes permitting decisions).¹⁷
- Expand on the efforts of the Michigan Public Service Commission to conduct an environmental justice and health impact analysis as part of Integrated Resource Planning (IRP) so the potential community impacts of utility investment decisions are more fully considered.¹⁷
- Elevate community health impacts and equitable access to infrastructure in energy planning and investment decisions. Continue to develop and refine innovative rate designs to incent behaviors that advance clean energy goals.¹⁷
- Protect and manage Michigan's natural and working lands to store and sequester carbon and offer additional benefits including limiting water runoff pollution, providing habitats that support biodiversity, and reducing the impacts on Michigan communities from more frequent and intense flooding, extreme heat, and other effects of climate change.¹⁷





The M-LEEaD Center's Community Engagement Core (CEC) increases awareness and understanding of environmental health research.

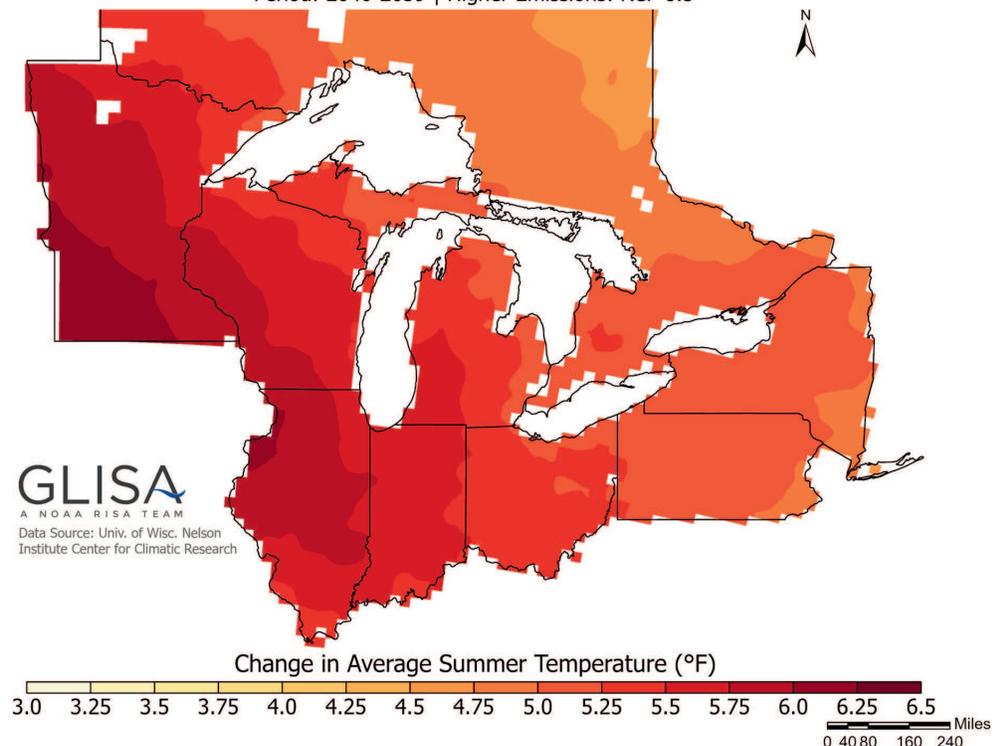
Stakeholder Advocacy Board members include:

- Community Health and Social Services
- Detroit Health Department
- Detroit Hispanic Development Corporation
- Detroiters Working for Environmental Justice
- Eastside Community Network
- Ecology Center
- Green Door Initiative
- Henry Ford Health System
- MDHHS
- Michigan Environmental Justice Coalition
- Sierra Club
- We the People of Detroit

How are climate change & extreme heat impacting Michigan?

Temperatures are rising and heat waves are becoming more frequent. As the map below shows, the change in average summer temperature across the Great Lakes area could increase by 3-6 degrees Fahrenheit.²

Projected Change in Average Summer Temperature by Mid-Century
 Period: 2040-2059 | Higher Emissions: RCP 8.5



In southeast Michigan there are many ‘urban heat islands’ – areas with significantly warmer temperatures due to buildings and hard surfaces. Green infrastructure can help address this challenge, along with greenhouse gas emissions and stormwater management, through redevelopment of vacant land.⁵

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What heat-related health effects can we expect for Michigan?

Extreme heat will lead to increased hospitalizations due to heat exhaustion and heatstroke, wildlife loss from habitat changes, and increased levels of mosquito and tick populations that carry diseases like West Nile Virus and Lyme Disease.¹⁷

Health conditions that increase vulnerability to heat include:

- **Cardiovascular Disease (CVD):** CVD affects the heart and blood vessels. The body regulates temperature by widening and narrowing blood vessels to adjust blood flow. When people have CVD, their bodies may have difficulty responding to extreme heat.¹⁰
- **Kidney Disease:** Kidneys filter blood and control blood pressure, which is necessary for regulating body temperature. As a result, those with kidney disease are more vulnerable to the effects of extreme heat.¹⁰
- **Asthma:** Asthma affects both children and adults, making it difficult to breathe.⁹ Asthma is made worse with increasing temperatures. The Michigan 2012-2014 asthma hospital rate was 12.54 per 10,000 people.⁷

Please see http://mleead.umich.edu/Coec_Fact_Sheets.php for the citations included in this factsheet.

The University of Michigan Lifestage Environmental Exposures and Disease Center (M-LEEaD) Community Engagement Core (CEC) promotes collaboration among UM environmental health researchers and communities to advance knowledge of environmental health issues that affect community members in Detroit and Southeast Michigan.

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