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Navigating Climate Challenges in the Quad Cities

Unchecked climate change threatens the Quad Cities' economic viability, natural assets, and public health; our assessment describes the challenges and a range of solutions.



A UNIQUE LOCATION The Mississippi River communities known as the Quad Cities of Iowa and Illinois have long been vulnerable to flooding from multiple sources – the ‘Big Muddy’ itself, Illinois’ Rock River and urban runoff. As climate change intensifies, extreme weather – including severe flooding, wildfires, droughts, and extreme heat – will continue to impact the region’s quality of life.

LOOKING TO THE FUTURE This assessment from the National Wildlife Federation, Prairie Rivers Network, and the University of Illinois’ Discovery Partners Institute developed localized climate models to analyze what could happen under a variety of emissions scenarios. The goal is to provide Quad Cities residents with a better understanding of what climate change might bring and to outline some options for creating a healthier and more resilient future.

VULNERABLE COMMUNITIES The impacts of climate change will be felt by everyone in the Quad Cities region. Vulnerable groups, including those with lower socioeconomic status, Black, Indigenous, People of Color, renters, people experiencing homelessness, immigrants, and people with disabilities, will be more likely to experience significant health impacts from heat or catastrophic property losses from flooding.

COMMUNITY DRIVEN A number of Quad Cities stakeholders helped shape this assessment, better aligning the nature-based solutions considered with community concerns and knowledge. These findings are meant to be a starting point for resilience conversations within the Quad Cities communities. The local stakeholders who reviewed this assessment noted that more education, research, and funding will be necessary to identify and implement specific solutions, and ultimately make the region more resilient to the impacts of climate change. We plan to broadly disseminate these findings to build local support for community-selected resilience solutions, with a focus on the region’s more vulnerable communities.



PHOTO: JULIE MALAKE

A Warmer, Wetter Future for the Quad Cities

Intensity and frequency of flooding, drought and extreme heat are projected to increase in the Quad Cities over the 21st century.

- Rock Island and other downstream areas are at particular risk, as higher floods could breach the existing levees.
- Davenport and Bettendorf will likely experience repeated flooding in the coming decades, exacerbated by runoff from the densely developed landscape.
- Critical infrastructure such as the I-74 bridge will be at an increased risk of flooding, threatening connectivity across the region.
- Places including Cargill AgHorizons, Isle Casino Hotel Bettendorf, the Martin Luther King Center, Vibrant Arena at the MARK, and Lindsay Park Yacht Club could become susceptible to flooding as early as 2040.
- Under a high-emission scenario, the Quad Cities could experience nearly two months of temperatures soaring above 95 degrees, making extended summer heat waves the new normal. The Quad Cities currently experience an average of three days over 95 degrees a year. This kind of heat poses risks to vulnerable groups, including those with pre-existing health conditions and people working outdoors. The types of flooding solutions we modeled leverage the protective value of nature and can help reduce temperatures.

Local Decisions, Local Benefits

The assessment includes several recommendations for enhancing the region's resilience in the face of climate change:

- The assessment demonstrated how solutions incorporating natural features – such as green roofs, permeable pavement, and stormwater gardens known as bioswales – could reduce flooding caused by runoff.
- Trees in the Quad Cities currently absorb approximately 69 million gallons of storm runoff, three million pounds of air pollution, and more than 100,000 tons of carbon pollution annually. Protecting the Quad Cities' existing urban forest will reduce heat and flooding.
- Community leaders are considering restoration projects such as converting vacant lots to green spaces, restoring ravines, and increasing equitable river access.
- To mitigate flooding from the Mississippi River itself, larger-scale solutions are necessary. For example, the 382-acre Nahant Marsh catches and filters up to two billion gallons of water during severe rain events. Ensuring that upstream wetlands like Nahant Marsh remain healthy in the future is one way to reduce climate-fueled flooding. A comprehensive solution for Mississippi River flooding will require coordinated action from stakeholders upstream.

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