

Indigenous communities face a higher risk of socioeconomic vulnerability due to flooding

January 6 2022



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Indigenous communities are at higher risk of hardship from climate-change-caused flooding because of pre-existing socioeconomic vulnerability, a new study shows.

The study's findings also reveal that factors influencing socioeconomic vulnerability in Indigenous communities include the legacy of colonization, attributes of race and ethnicity, income, built environment, elderly populations, education, occupation, [family structure](#), and access to resources.

The study, led by University of Waterloo researcher Liton Chakraborty, found that measuring socioeconomic vulnerability to flooding provides valuable information to support Indigenous flood risk management planning, especially under accelerating [climate change](#).

"This is a first attempt in Canada to assess place-based social vulnerability and flood exposure for Indigenous populations at a national level," Chakraborty said. "The study contributes to knowledge about socioeconomic factors that contribute to flood risk among First Nations, Métis, and Inuit peoples living on-reserve."

The report captured the percentage of the population and number of residential properties in a 100-year flood zone. The results revealed "hotspots" where flood risk spatially coincided with socioeconomic disadvantage.

Chakraborty also noted that there are considerable data gaps limiting flood risk assessment in Canada and that the [federal government](#) should prioritize resources for identifying flood exposure in Indigenous communities. "Part of the considerations should be the dynamic range of geography, topography, and available data inputs from local scale determinations of flood risk," he said.

The study, "Leveraging Hazard, Exposure, and Social Vulnerability Data to Assess Flood Risk to Indigenous Communities in Canada," authored by Waterloo researchers Chakraborty, Jason Thistlethwaite, Andrea Minano, Daniel Henstra and Daniel Scott, was recently published in the

International Journal of Disaster Risk Science.

More information: Liton Chakraborty et al, Leveraging Hazard, Exposure, and Social Vulnerability Data to Assess Flood Risk to Indigenous Communities in Canada, *International Journal of Disaster Risk Science* (2021). [DOI: 10.1007/s13753-021-00383-1](https://doi.org/10.1007/s13753-021-00383-1)

Provided by University of Waterloo

Citation: Indigenous communities face a higher risk of socioeconomic vulnerability due to flooding (2022, January 6) retrieved 11 May 2024 from <https://phys.org/news/2022-01-indigenous-higher-socioeconomic-vulnerability-due.html>

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