



Fighting Floods Requires Better Long Term Planning

What is this research about?

There has been a growing concern that growing urbanization increases the risk of flooding in urban areas. The Upper Thames River Watershed is an area that is at a great risk of flooding because the Thames River it is sensitive to climate change. The Thames passes through the city of London, Ontario, Canada. London has had a number of floods in its history. The most severe floods happen in the springtime. London developed a system of dykes and dams to protect it from flooding. As the city of London continues to urbanize, it may be at a greater risk of flooding.

What did the researchers do?

The goal of this study was to show that, as cities become larger and more populated, they are at a greater risk of being flooded. The researchers used the Upper Thames River Watershed as a case study. The goal was to measure the flood risk for the city of London as it becomes urbanized. Their study included 5 components:

What you need to know:

It is time for a new approach in flood emergency management. Rather than focusing on just the crises, planners need to look at the issue of vulnerability and its management.

1. Land use classification of satellite imagery
2. Remote sensing data analysis
3. Hydrologic data analysis
4. Integration of remote sensing and hydrologic data

What did the researchers find?

The percentage of family farms in the area dropped gradually throughout the time period. The researchers found that since 1974, the Upper Thames River Watershed has experienced a great amount of urban growth. According to satellite sensors, there was a big increase in urban sprawl in the area. Overall, 22.5% of

the watershed was urban in 2000 compared to 10.7% in 1974. This rapid urbanization has put London at a risk of suffering even more severe damage from a flood.

How can you use this research?

Policymakers may use this research to improve land use planning. They may also apply the research to design conservation programs that help manage urbanization. Regular flood management policies only focus on dealing with a flood once it happens. Instead, these policies must also look at the vulnerability of settled areas to natural disasters like floods.

About the Researchers

Niru Nirupama is an Associate Professor of Disaster and Emergency Management in the Faculty of Liberal Arts and Professional Studies at York University. Slobodan Simonovic is a Professor of Civil and Environmental Engineering at the University of Western Ontario.

nirupama@yorku.ca

Citation

Nirupama, N., & Simonovic, S. P. (2007). Increase of flood risk due to urbanisation: A Canadian example. *Natural Hazards*, 40(1), 25-41. Available online at <http://bit.ly/1pbYcxF>

Keywords

Flood risk, Remote sensing, Urbanization, Flood management, Thames River Ontario

Knowledge Mobilization at York

York's Knowledge Mobilization Unit provides services for faculty, graduate students, community and government seeking to maximize the impact of academic research and expertise on public policy, social programming, and professional practice. This summary has been supported by the Office of the Vice-President Research and Innovation at York and project funding from SSHRC and CIHR.

kmbunit@yorku.ca

www.researchimpact.ca

