

Building Urban Development Scenarios into Assessments of Future Flood Risk

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Problem

The devastating impact of flood events around the globe demonstrates the need for more comprehensive assessments of future flood risk in urban policy.

Risk assessments based on **future** flood projections paired with **current** urban plans are missing a key characteristic of the hazard – what will urban landscapes in Aotearoa-NZ look like in 2050 or 2100?

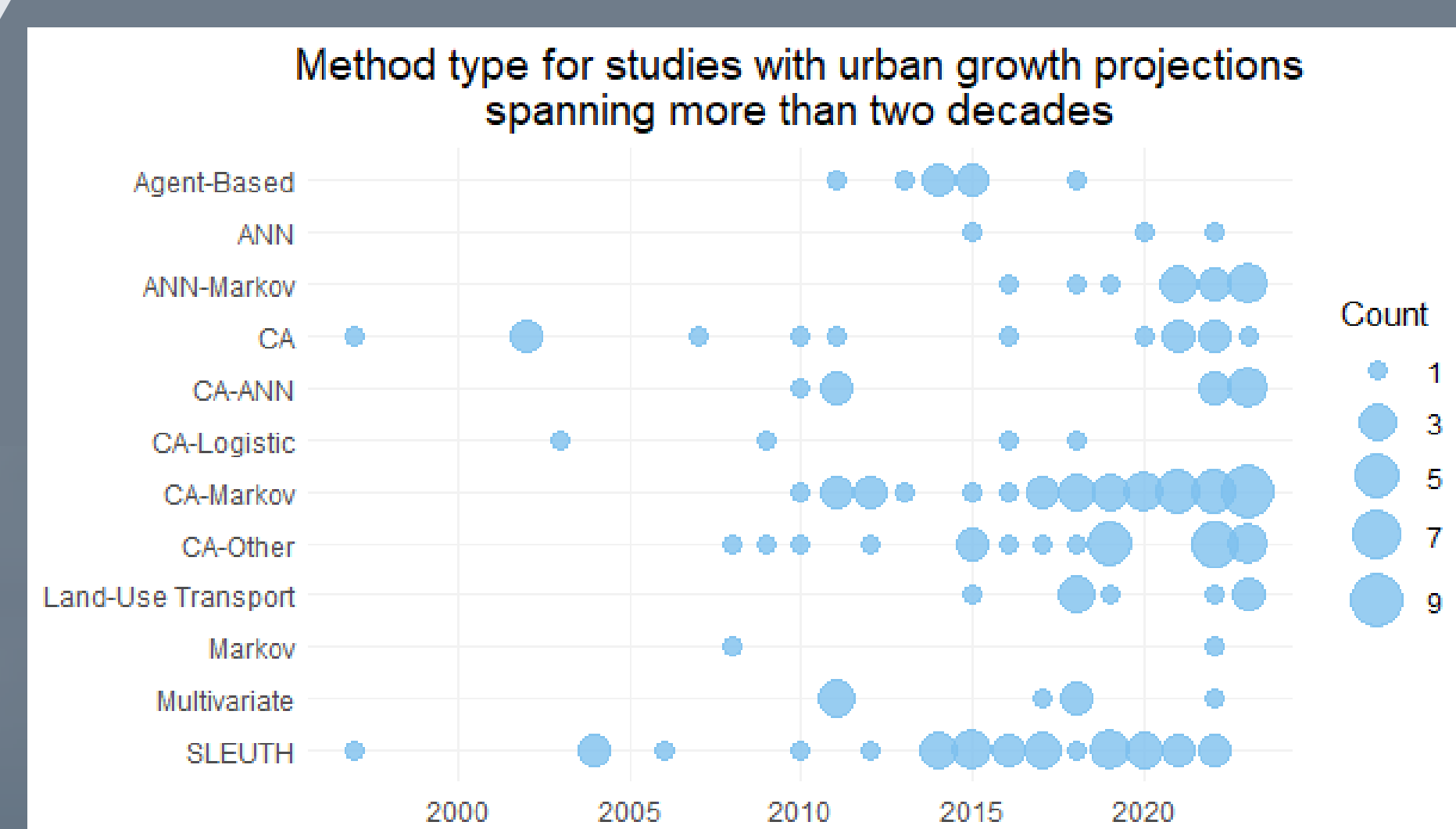
Aim

To explore, test and develop methods to generate a range of alternative long-term scenarios of future urban form for building into assessments of future flood risk.

Drivers of Urban Growth



Modelling Urban Growth



What are the advantages and limitations of each method for long-term scenario generation?

Interviews

How do methods for modelling urban growth vary across NZ?

Interview urban planners and policy makers to identify key issues and determine what a useful tool for them would look like.

Benchmarking

What is the sensitivity of urban growth predictions to diverse modelling methods?

Compare model outputs for a case study NZ urban area experiencing strong growth but also susceptible to climate hazards.

Simulation

How can urban development scenarios be generated and integrated with flood risk models?

Monte Carlo approach to generate a distribution of future urban scenarios. Methodology for linking the urban model with flood models or the RiskScope software.

Goal

A range of possible urban futures that can be coupled with flood hazard projections to provide a more comprehensive picture of the uncertainties and inequalities of future flood risk.

Learn more



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Flooding in Awatoto, Credit: Napier City Council