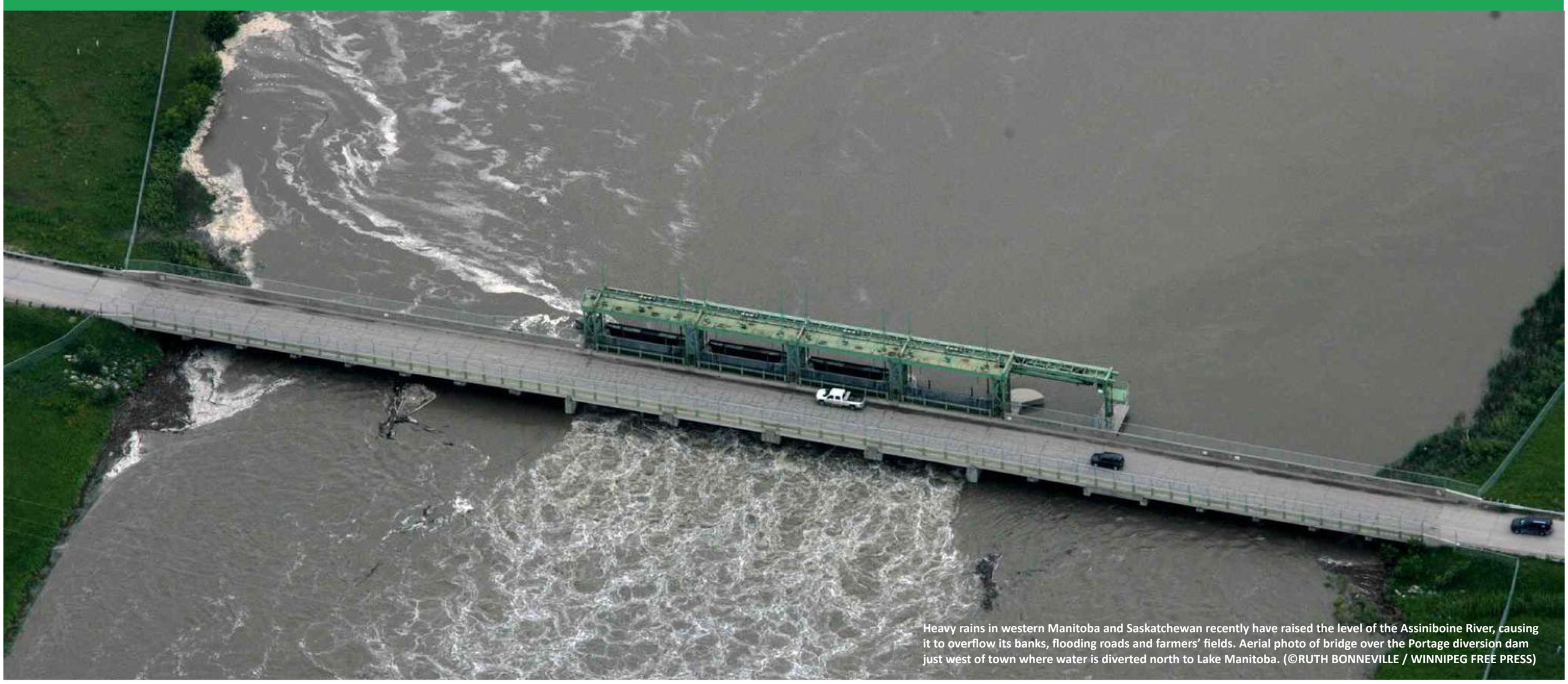
Ecosystem perceptions, resilience and governance in flood-prone regions



Heavy rains in western Manitoba and Saskatchewan recently have raised the level of the Assiniboine River, causing it to overflow its banks, flooding roads and farmers' fields. Aerial photo of bridge over the Portage diversion dam just west of town where water is diverted north to Lake Manitoba. (©RUTH BONNEVILLE / WINNIPEG FREE PRESS)

Overview

This research explored the relationship between perceptions of the ecosystem and governance in a series of cases. More specifically, the aims were to investigate:

- Stakeholder's perceptions of who should be involved in governance,
- Perceptions of the level at which governance should occur, and
- Differences in these patterns based on the perceptions of the ecosystem across three temporal dimensions of flooding: flood preparation, immediate flood response, and flood recovery.

A survey was administered for this purpose in five regions where flooding was a concern: Winnipeg, Canada; Meuse River, The Netherlands; Kristianstad, Sweden; Venice, Italy; and South-East Queensland, Australia. These cases represent a range of different flooding scenarios in terms of frequency, cause, and urban and rural settings.

Key findings

1. **Perceptions of the ecosystem**
   When considering how ecosystems respond to flooding, most respondents believed that systems are dynamic and complex and adaptation is important; however, one quarter of respondents believed that either the system is very stable and adheres to one state or stays within a range of stable states. **Respondents generally indicated that they would not change their responses if they considered a different disturbance other than flooding, so we can assume that these perspectives hold for ecosystem governance more broadly.**

2. **Preferences for governance approaches**
   Whether before, during or after a flood, there was an overall preference for multi-sectoral decision making and leadership involving governments, industries and non-government organizations. Respondents were least inclined to have the private sector involved. This leads us to consider that **appropriate and socially preferred forms of governance for flooding, and perhaps water governance in general, crosses jurisdictional and contextual boundaries.** It includes governments, is collaborative, and uses a combination of policies, regulatory instruments and cooperative agreements rather than market-based mechanisms.

3. **Influence of personal experience on responses**
   Respondents who have not been directly affected by flooding tend to believe their region is resilient to flooding. This observation raises important questions about whether it is possible to narrow the gap between human perceptions and reality, and how this might help ensure appropriate planning (e.g., infrastructure) and responses (e.g., emergency management). How can we use this information to help guide appropriate policy around flooding?

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