



## Natural and unnatural complexities: flood control along Manitoba's Assiniboine River

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### Abstract

Flooding and flood control long have been topics of concern for geographers and historians of North America, from Gilbert White's foundational work to attempts to understand the recent disaster in New Orleans. This paper considers the problem of flood control along the Assiniboine River in the province of Manitoba, Canada. The first section addresses the local landscape and the larger context, explaining changes in the relevant human and physical geography. The second section examines efforts to mitigate flooding, focusing on how the risk of inundation was shifted in location (not eliminated altogether) and compounded through time (not progressively resolved). The third focuses on a further source of complexity: the contested character of government jurisdiction. This final section also addresses major mid twentieth century changes in mitigation efforts: in the light of flooding on an unprecedented scale, governments became more open to compromise and more willing to undertake substantial projects. Gilbert White asserted that while floods are natural occurrences, flood damages are the responsibility of humanity. The question of responsibility might seem relatively clear in relation to flood mitigation, given that dykes are human constructions. The history of flood mitigation along the Assiniboine would suggest, however, that assigning responsibility for the failures and successes of flood mitigation is not so straightforward.

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### Introduction

On 14 May 1923, the *Winnipeg Free Press* printed a long commentary about flooding along the Assiniboine River on the Canadian Prairies. The author, identified only as J. M. L. (engineer), explained that the water situation was particularly troublesome in this region, arguing that it is 'doubtful if anywhere on the continent a more complicated series of factors in flood conditions are met with than those whose effects are observed in Manitoba'. In the southern portion of the province, vast river basins encompassed areas that varied greatly in topography and climate, and human alterations for purposes of agriculture, settlement and transportation had only compounded matters. The basic question of which government should be responsible for managing the river was intensely debated. As the writer put it: 'The natural complexities have been made more intricate by unnatural ones...'. A copy of J. M. L.'s published piece is contained in the files of the Canadian government's Department of Public Works, surrounded by documents from the mid 1940s.<sup>1</sup> Adjoining materials make clear that it is

included not as a window into how an earlier generation perceived the flood situation, but as a useful analysis that spoke as much to the contemporary situation as to the historical context. Whether natural or unnatural, the complexities certainly had not disappeared.

In the mid twentieth century, geographer Gilbert White set the tone for much academic scholarship on natural hazards with the observation that while flooding is beyond human control (an Act of God, in his phrasing), flood damages are largely the work of humanity.<sup>2</sup> By arguing that all flood disasters had both natural and cultural components, White broadened J. M. L.'s earlier assessment of the Assiniboine River situation. Following from White's work, early hazards geographers focused on analyzing the social, political and economic components of various disasters. Typically, these scholars concentrated on a single hazardous episode or on comparisons between hazardous episodes in the same or different locations, rather than on extensive study of the long-term development of particular hazard-prone areas.<sup>3</sup> More recently, historical geographers and environmental historians have filled in the

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<sup>1</sup> Library and Archives of Canada [hereafter LAC], RG 11, Department of Public Works, Vol. 4355, file: 5816-1-F, Extract from *Winnipeg Free Press*, May, 1923.

<sup>2</sup> G.F. White, Human adjustment to flood: a geographical approach to the flood problem in the United States, Ph.D. dissertation, University of Chicago, 1942, 2.

<sup>3</sup> G.F. White, Natural hazards research: concepts, methods, and policy implications, in: G.F. White (Ed.), *Natural Hazards: Local, National, Global*, New York, 1974, 3–16.

histories of many flood-vulnerable locations. Scholars such as Ari Kelman, Craig Colten, and Georgina H. Endfield have provided rich historical studies of cities and regions that have endured high water.<sup>4</sup> Other scholars have concentrated more particularly on the question of flood control.<sup>5</sup> This article follows from much of this research, explaining the human as well as the environmental factors that contributed to flooding while focusing on the history of flood prevention along the Assiniboine River in the Province of Manitoba, Canada.

Recently, historian Stéphane Castonguay argued that flooding along the St. Francis River in the Province of Québec, a regular occurrence to which residents had long adjusted, was redefined as a catastrophe because of the needs of early to mid twentieth century industry.<sup>6</sup> The situation was different along the stretch of the Assiniboine River examined in this article, as in this rural area high water posed a serious threat to the extensive agricultural settlement desired by the Federal, Provincial, and Municipal governments as well as by individual settlers. Despite some recognition that floods helped enrich soils leading to better crops, the prevailing view from the late nineteenth century onward was that Assiniboine River floods were a problem to be solved. But the idea of flood control on the Assiniboine – what this meant and who should be responsible for it – was no more straightforward than the idea of flooding along the St. Francis. Rather than the emergence of a new idea, as Castonguay discusses in relation to flooding as a catastrophe, this article addresses a long-running debate over what is appropriate flood control and who is responsible for it.

The first section of the paper addresses the local landscape and the larger context, explaining the relevant human and physical geography. The second examines efforts to mitigate flooding, focusing on how the risk of inundation was shifted in location (not eliminated altogether) and compounded through time (not progressively resolved). Governments and settlers alike scrambled to protect their interests, often without regard for the effects on other interested parties. Predictably, upstream flood protection worsened the downstream situation. And all regions along the river were affected by change over time as farmers altered how they used their land and so altered their preferred method of managing high water. What emerged was a patchwork flood control effort, satisfactory to neither residents who felt their interests were not served nor governments who fielded continuing complaints.

The third section of the paper focuses on a further source of complexity: the contested character of government jurisdiction. Karen O'Neill has argued that, in the American case, local interests successfully influenced the federal government's flood control efforts.<sup>7</sup> The Assiniboine River situation suggests the articulation between local problems and federal action was more contested in Canada. Governments (provincial and federal, with some activity at municipal levels) and departments (the federal Departments of Public Works and Agriculture, largely) agreed that flood protection

was necessary but disagreed over which entity should take this on. The final section also addresses major mid twentieth century changes in Canadian flood mitigation efforts: mainly in light of flooding on an unprecedented scale, governments became more open to compromise and more willing to undertake substantial projects. What emerged was a new impetus to deal with flooding, catalyzed in part through a particularly catastrophic episode of high water. This article explores the question of responsibility in relation to flood mitigation. If floods were, as Gilbert White asserted, beyond human control and flood damages were a human responsibility, who or what was responsible for the failures and successes of flood mitigation efforts along the Assiniboine River?

### The Assiniboine River

The Province of Manitoba, Canada, is widely known to be afflicted by flooding. In 1950, much of the provincial south as well as a significant portion of the City of Winnipeg was under water. Images of the submerged province were circulated nationally and internationally, and significant financial aid was received from Britain and the United States. In the mid-1960s, the construction of the Winnipeg Floodway, an enormous channel meant to divert excess flows around the city, was a subject of significant public interest as one of the largest earth-moving projects in human history to that time. It was the Red River that was at the centre of these events. Known as the Red River of the North in the United States, this large, winding waterway runs northward along the Minnesota-North Dakota border, flows through southern Manitoba and the City of Winnipeg, and eventually dumps into Lake Winnipeg. Those who live along the Red endured another catastrophic flood in 1997, which resulted in the utter destruction of parts of the twin cities of Grand Forks and East Grand Forks, North Dakota. Some have hypothesized that it was only the Floodway that preserved Winnipeg from similar devastation. Because of these successive floods, many people, even those living far from the river's banks, regard the Red with a mixture of caution and awe.

But southern Manitoba boasts another substantial waterway, and it too has a history of flooding. The Assiniboine has been called 'the quintessential large prairie river' for how it runs from the western 'drought-prone, semiarid, Palliser Triangle region' to the eastern 'flood-prone, subhumid, Red River Valley'. It traverses the Parkland ecotone, the transitional area between the prairie to the south and the forest to the north.<sup>8</sup> The river emerges from the Nut Mountain area in east central Saskatchewan, Canada. It flows southeastward as it crosses into Manitoba, and begins to run more directly eastward near the southwestern Manitoba city of Brandon. Also in this region, it descends from the second prairie level above the Manitoba Escarpment to the first prairie level or Red River Valley. The Assiniboine eventually dumps into the Red River in the heart of Winnipeg, Manitoba's provincial capital and largest city (see Fig. 1).

<sup>4</sup> C. Colten, *An Unnatural Metropolis: Wrestling New Orleans from Nature*, Baton Rouge, 2006; B. Gumprecht, *The Los Angeles River: Its Life, Death, and Possible Rebirth*, Baltimore, 2001; J. Orsi, *Hazardous Metropolis: Flooding and Urban Ecology in Los Angeles*, Berkeley, 2004; A. Kelman, *A River and its City: The Nature of Landscape in New Orleans*, Berkeley, 2003; G.H. Endfield, I.F. Tejero and S.L. O'Hara, Conflict and cooperation: water, floods, and social response in colonial Guanajuato, Mexico, *Environmental History* 9, 2 (2004) 221–247; F. Mauelshagen, Flood disasters and political culture at the German North Sea Coast: a long-term historical perspective, *Historical Social Research* 32, 3 (2007) 133–144.

<sup>5</sup> B. Weil, The rivers come: colonial flood control and knowledge systems in the Indus basin, 1840s–1930s, *Environment & History* 12, 1 (2006) 3–29; M.G. Hatvany, The origins of the Acadian 'aboiteau': an environmental-historical Geography of the northeast, *Historical Geography* 30 (2002) 121–137; M. Saikku, The federal government and flood control in the lower Mississippi Valley, *American Studies in Scandinavia* 38, 2 (2006) 138–148; C. Mukerji, Stewardship politics and the control of wild weather: levees, seawalls, and state building in 17th-century France, *Social Studies of Science* 37, 1 (2007) 127–133; K.M. O'Neill, *Rivers by Design: State Power and the Origins of U.S. Flood Control*, Durham, 2006; C.G. Boone, Private initiatives to make flood control public: the St. Gabriel Levee and Railway Company in Montreal, 1886–1890, *Historical Geography* 25 (1997) 100–112.

<sup>6</sup> S. Castonguay, The production of flood as natural catastrophe: extreme events and the construction of vulnerability in the drainage basin of the St. Francis River (Quebec), mid-nineteenth to mid-twentieth century, *Environmental History*, 12, 4 (2007) 820–844.

<sup>7</sup> O'Neill, *Rivers by Design* (note 5).

<sup>8</sup> W.F. Rannie, *Assessment of the Historic Hydrology of the Assiniboine River and Watershed, 1793–1870*, Geological Survey of Canada Open File 4087, 2001, 1.

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