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Out of control: How we failed to adapt and suffered the consequences



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ABSTRACT

International events, economic changes, and the impacts of climate change will test the Great Lakes–St. Lawrence River basin over the next five decades. The region's ability to effectively meet these challenges will require foresight, investment, and cooperation. As a contribution to this special issue, this paper presents one plausible 50-year scenario of the emergence of these challenges and the region's response to them. In it, early signs of economic, environmental, and governmental vulnerability are not adequately addressed. Investments aren't made to provide needed funding for monitoring and evaluation. The region's intellectual and environmental capital isn't leveraged, limiting the region's ability to address its economic and environmental challenges and compete with the rest of the world. The pursuit of local self-interest and short-term survival outweighs cooperation across jurisdictions and long-term planning. The vision of the future presented here is one in which the region's economy is dependent on stagnant extractive industries, its ecosystems are compromised, and its global standing is greatly reduced. In response to all of these developments, by 2063 hopelessness and violent tension is spreading throughout the region's population.

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Introduction

In order to avoid danger, one must first anticipate it. “Out of Control” describes five decades of challenges facing the Great Lakes–St. Lawrence River basin from 2013 to 2063. The scenario presented in this paper draws upon the insights of research in this special issue on the following major drivers of future change in the basin and surrounding Great Lakes region: invasive species (Pagnucco et al., 2015), biological and chemical contaminants (Cornwell et al., 2015), climate change (Bartolai et al., 2015), demographics and societal values (Méthot et al., 2015), the economy (Campbell et al., 2015), energy (Kelly et al., 2015), governance and geopolitics (Jetoo et al., 2015), and water quantity (Maghrebi et al., 2015), as well as technology (See Appendix A). This future history represents one of the four plausible narratives laid out in Laurent et al. (2015) based upon the intersection of two highly uncertain and highly influential forces present in the region: the human capacity for change

and an environmental and economic balance. As the most negative scenario explored in this issue, it describes the possible consequences of both a fragile environment and economy and a society incapable of changing to meet these challenges. The rest of the first section provides a short overview of the fifty-year period. In section 2, we provide a scenario narrative based on five decade-long descriptions before concluding in section 3.

Drifting towards the cliff

In 2012, the Great Lakes–St. Lawrence River region celebrated a high point in its global profile as a regional economic, environmental, and political leader as Canada and the US successfully amended their Great Lakes Water Quality Agreement (GLWQA; IJC, 2012). In 2063, this peak is viewed as a period of missed opportunity. Narratives of international comity and returning prosperity obscured concerns over shortfalls of moral commitment, specific objectives, science-driven monitoring, economic-savvy assessment, and considerations about impending climate change. For several decades, more and more alarming conditions were met only with apathy or mismanagement. As the magnitude of global climate change impacts emerged in earnest

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in the 2030s and 40s, the region's social, political and technological capacity splintered.

Through committing real investments to planning, research, and innovation, competing regions successfully adopted adaptive management strategies that allowed them to navigate the troubled decades of the mid-century. In contrast, with its strength sapped by continued environmental crisis and economic decline, the Great Lakes region was easy prey for those desperate to take what advantage they could.

50 years of unraveling policy

In 50 years, a world-leading region in cross-border governance became just another example of how the growing strain from environmental and economic decline could undermine the ability to govern effectively. In the first few decades, intensifying economic inequality and uncertainty punctuated by financial crises fed deepening public division and cynicism about governance. Retrenchment of public investment and dependence on fossil fuel extraction created a feedback loop that reinforced more and more myopic decisions. The result was a failure to make the investments necessary to realize the promise of existing policy frameworks like the 2012 GLWQA, the 2011 Beyond the Border Initiative (GC, 2011), and the 2008 Great Lakes Compact (GC and USFG, 2008).

These dynamics also meant that the resulting setbacks were not seen as focusing events for collaboration and improvement. Instead, blame spread, fractures formed, and self-interested exploitation filled up the resulting regulatory vacuum. Increasing economic dependence on fossil fuel development made the region a target when the global burden of runaway climate change became an unquestionable reality. International criticism of North America only heightened tensions both within and between Canada and the US. These binational tensions reached a critical stage as the US Congress voted to withdraw the Great Lakes Compact, eventually putting the lakes themselves on the auction block.

Interrelated social and environmental challenges

Over the course of 50 years, identifiable drivers of change shifted the region into this downward spiral. The different drivers were so intertwined that describing the trajectory of one demands discussing the rest. Fossil-fuel extraction around the Great Lakes region brought limited pockets of wealth at the expense of the region's overall health. Meanwhile, the deepening of the climate crisis caused by dependence on fossil fuels led to environmental conditions that sapped the Great Lakes region's environment, economy and governing capacities. Poor management of contaminants and invasive species, exacerbated by the impacts of climate change, reduced the prospects of protecting the lakes. Dwindling investment and interest only returned once the Great Lakes themselves were transformed into export commodities. Already decreasing lake levels began to decline more rapidly, providing new opportunities for invasive species, increased localized contamination, fewer tourists, and, for many, even less incentive to see them as much more than freshwater banks.

As governments on both sides of the border struggled with mounting debts and growing unemployment, they neglected necessary investments that could have produced shared economic and environmental improvements across the region. The governing efforts surrounding the lakes failed to address a critical challenge — utilizing economic theory and evaluation to effectively establish the undeniable interconnectedness of the economy with the environment. Without establishing this informational basis for an innovative, flexible economy that could promote and preserve the region's natural and social resources, the region's economy lurched from one resource extraction dependency to another.

Scenario narrative

This fifty-year scenario narrative is composed of five decade-long descriptions told from the perspective of someone living in the region

in 2063. Each subsequent decade builds off of the environmental and economic challenges that emerged in the previous ones along with the governing responses to them. Some of the major aspects of this future trajectory are placed in chronological order within the timeline below (Fig. 1). (See Fig. 2.)

2013–2023: today's agenda — tomorrow's tragedy

"Fracking has brought peace to a beleaguered nation. The environment will learn to adapt just as we do. All that matters is we no longer have to go to war to ensure a stable energy supply."— James Frank, Governor of Ohio, 2020

In the first decade of the 21st century, the governments of the Great Lakes region implemented policies forward-thinking and flexible enough to limit the harmful side effects of the region's economic activity. Binational efforts such as the Great Lakes Executive Committee and the International Joint Commission sought to ensure a stable and vibrant regional community. Numerous studies made the connection between the health of the environment and the health of the economy within the Great Lakes region (Austin et al., 2008; Vaccaro and Read, 2011). The Great Lakes sustained successful tourism, boating, and sport fishing industries, contributing billions of dollars to the region's economy every year. The health of the region's natural resources led young families and companies to invest in the region, sustaining one of the most entrepreneurial, highly skilled and educated work forces anywhere in the world. Governments, industries and nongovernmental organizations (NGOs) discussed pursuing environmentally-beneficial economic development in the Great Lakes region. Governmental investments in alternative and renewable energy industries along with consumer support encouraged the private sector to pursue greener production methods.



Fig. 1. Timeline of events for the Great Lakes–St. Lawrence River basin from 2013 until 2063 under an “out of control” scenario.

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