

# **Bridging Urban Planning and Public Health: Investigating the Relationship Between Land Use Change and Vector-Borne Disease Risks in Ontario**

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## **Executive Summary**

Zoonotic diseases are diseases that are transmitted from animals to humans, and incidences of zoonotic spillover are on the rise globally due to several anthropogenic factors which have intensified the animal-human interface in recent decades; reshaping reservoir host communities and increasing the novel interactions between people and wildlife (UNEP 2020; Gibb, 2020). Urbanization and anthropogenic land use change has been identified as an important driver in this phenomenon, and several papers and reports have been published which call on urban planners to help mitigate zoonotic and vector-borne disease risks by safeguarding the planet's natural resources and ensuring environmentally and socially responsible development practices (Patz et al., 2004; Ahmed, S., et al., 2019; UNEP 2020; Wernecke et al., 2020). The aim of this report was to explore the ways in which Ontario planners can address this global challenge. The primary questions guiding this research are: what are the most prevalent zoonotic and/or vector-borne diseases in Ontario, as identified by Public Health Ontario, that are driven by land use or environmental factors? What is the current understanding of the risks of land use-induced zoonotic spillover in Ontario among epidemiological and public health experts, as well as planning and geography experts? And, what are urban planning recommendations and best practices that would help manage the risks of zoonotic disease transmission in Ontario?

To answer these questions, a scan of data published by Public Health Ontario identified Lyme disease and West Nile Virus (WNV) as the most prevalent zoonotic/vector-borne diseases of public health significance which involve spillover that is impacted by land use and environmental conditions. Next, a scoping literature review of eighty-five peer-reviewed articles and reports

