

Why Greenspace and Parks Matter to Health

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Disclosure Statement

- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

WE APPRECIATE THE HEALTH IMPACTS OF THE BUILT ENVIRONMENT

- Precursors:
 - Ability to be physically active
 - Air quality
 - Access to good nutrition
- Biomedical outcomes:
 - Obesity
 - Blood pressure
 - Injuries
 - Mental health
 - Mortality
- Social determinants:
 - Civic society, social capital, poverty



BUT WHAT ABOUT THE NATURAL ENVIRONMENT?

We grow our own food.

We live in houses and cities, increasingly far removed from nature.

We are rapidly converting all of the natural world into our built environments.

Should we worry about this?

Do we really need nature?

A man wearing a blue raincoat and a hat is sitting in a boat on a lake. A thought bubble above him contains the text "What did nature ever do for us?".

**What did
nature ever do
for us?**

- Breathable air
- Fresh water for drinking, cooking, cleaning, fishing, shipping and recreation
- Protection from flooding, droughts, and extreme weather
- Rich, non-eroding soils to grow our food
- Forests for cooling and sun-protection (and wood products, medications, hunting habitats)
- Beautiful spaces for enjoyment, recreation and health.

That's all...

WE ARE GENETICALLY
ENGINEERED FOR THIS.





**NOW WE HAVE ENGINEERED PHYSICAL ACTIVITY
AND NATURE OUT OF OUR LIVES**



CAN WE HAVE OUR(NUTRITIOUS) CAKE AND EAT IT TOO?

The ideal society would:

- have safe physical activity built into our transportation, recreation and work
- limit our working time (and minimize commuting time / distances)
- maximize our time / opportunities for family / friends and recreation
- foster civic involvement
- foster equity of opportunities for income, education and employment
- nurture children
- **provide us lots of daily time in nature**
- **be environmentally sustainable**

GREEN SPACES IN OUR COMMUNITIES ARE GOOD FOR OUR HEALTH

- Reduces heat island effect
- Can provide opportunities for local nutritious food production
- Increases physical activity
- Improves health outcomes (reduced BP, blood cortisol, surgery recovery time)
- Improves psychological / cognitive wellbeing / child development
- Increases social wellbeing
- Improves air quality and reduces related illness
- Increases quality of life

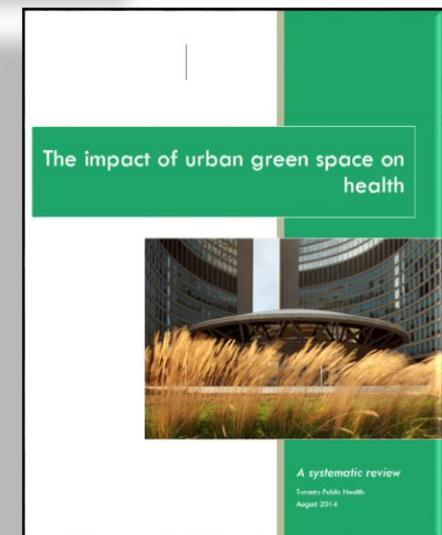
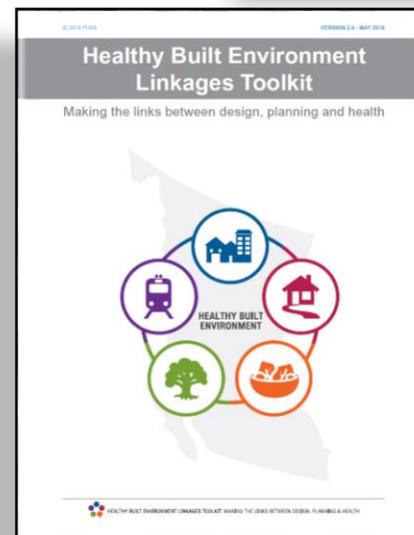


Table 3. Typology of the benefits of interacting with nature.

Benefit	Description	Examples
Psychological well-being	Positive effect on mental processes	Increased self-esteem [32,60,61] Improved mood [58,32] Reduced anger/frustration [62] Psychological well-being [13,63,64] Reduced anxiety [65] Improved behaviour [15]
Cognitive	Positive effect on cognitive ability or function	Attentional restoration [12,14,46,66,67] Reduced mental fatigue [63] Improved academic performance [68] Education/learning opportunities [49,55] Improved ability to perform tasks [15] Improved cognitive function in children [69] Improved productivity [35,68]
Physiological	Positive effect on physical function and/or physical health	Stress reduction [37,70,71] Reduced blood pressure [45,32] Reduced cortisol levels [70] Reduced headaches [37] Reduced mortality rates from circulatory disease [24] Faster healing [9] Addiction recovery [43] Perceived health/well-being [59] Reduced cardiovascular, respiratory disease and long-term illness [11] Reduced occurrence of illness [15,35]



Keniger, L. E., K. J. Gaston, K. N. Irvine and R. A. Fuller. "What Are the Benefits of Interacting with Nature?" *International Journal of Environmental Research and Public Health* 10, no. 3 (2013): 913-935.

1 Preserve and connect environmentally sensitive areas

Impacts on the Built Environment

- ↑ Biodiversity and preservation of biodiversity
- ↑ Tree canopy

Population Health Outcomes

- ↓ Costs for air pollution removal
- ↑ Energy savings to home owners/renters
- ↓ Storm management costs

2 Maximize opportunities for everyone to access natural environments

- ↑ Biodiversity and preservation of biodiversity

- ↑ Attention restoration
- ↓ Chronic disease
- ↓ Health care costs
- ↑ Mental Health
- ↑ Mood/depression regulation
- ↑ Physical activity
- ↑ Social well being
- ↑ Social well being
- ↓ Stress

3 Reduce urban air pollution by expanding natural elements across the landscape

- ↓ Ground level ozone
- ↑ Increased urban greening
- ↑ Outdoor air quality

- ↓ Cardiovascular mortality
- ↑ Energy savings
- ↑ General health
- ↓ Healthcare costs
- ↓ Pollution removal costs
- ↑ Recreation/tourism
- ↑ Respiratory health

4 Mitigate urban heat islands by expanding natural elements across the landscape

- ↓ Ambient air temperature
- ↓ Ground level ozone
- ↑ Increased urban greening
- ↓ Noise exposure

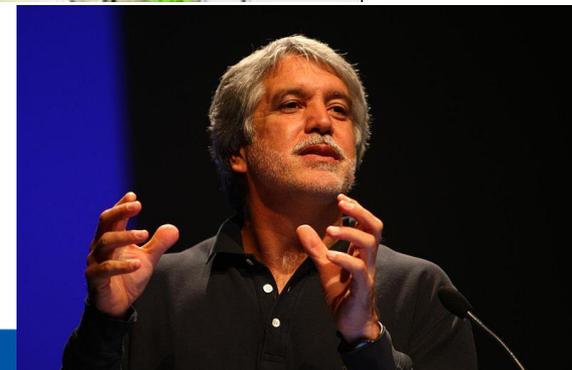
- ↓ Cardiovascular mortality
- ↑ General health
- ↓ Health care costs
- ↓ Heat related mortality and morbidity
- ↑ Mental health
- ↑ Outdoor air quality
- ↑ Physical health
- ↑ Respiratory health



THE IDEAL COMMUNITY DESIGN...



Source: Ted.com, Enrique Peñalosa: Why buses represent democracy in action



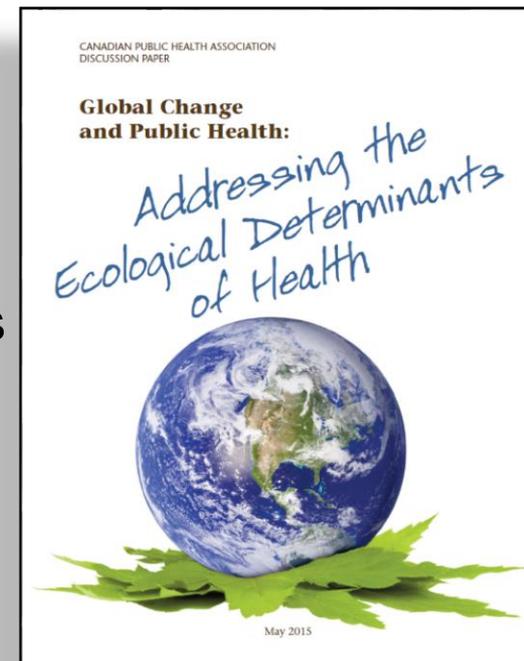
THE NEED TO REDEFINE “HEALTH”

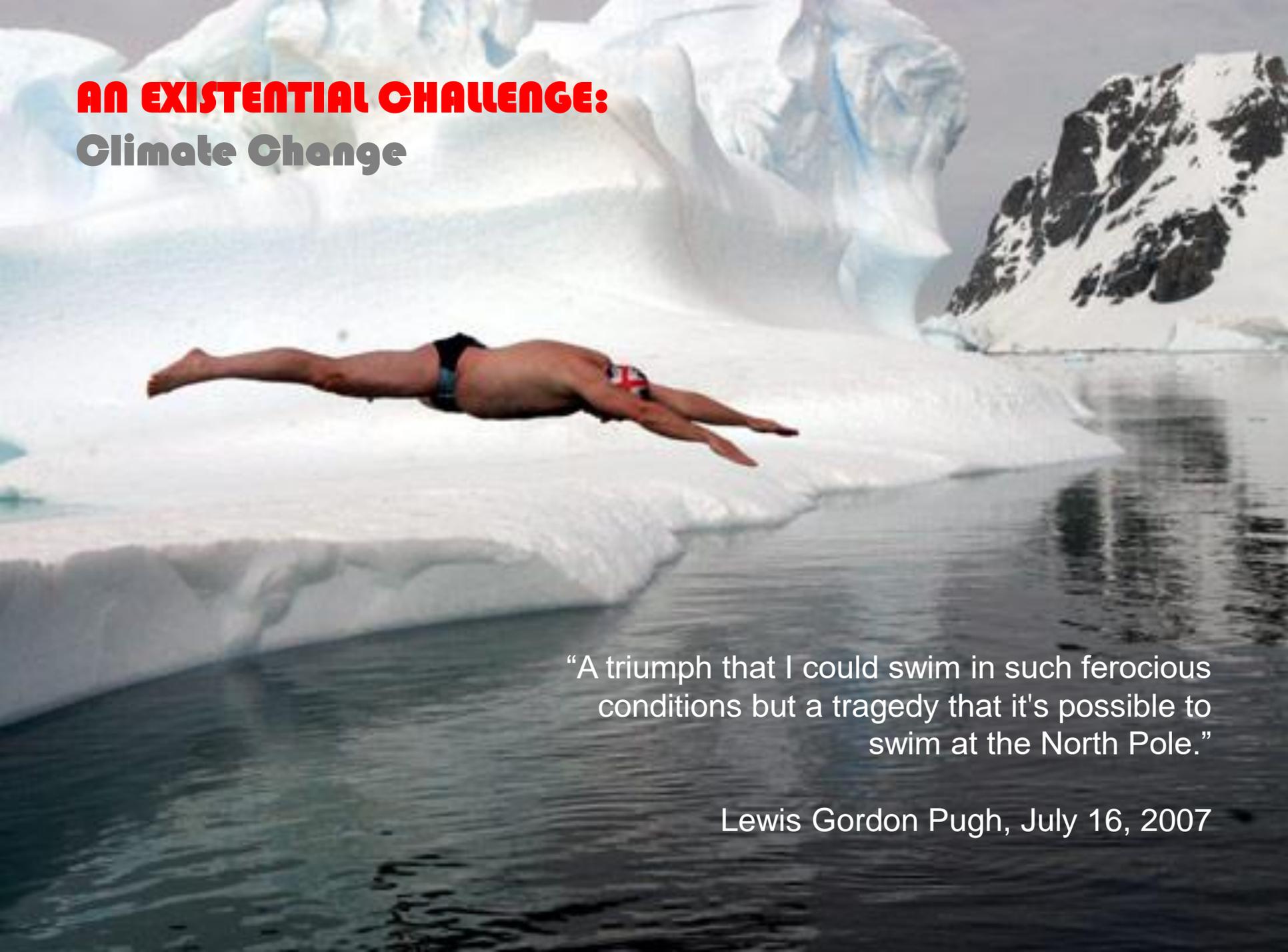
Moving from the WHO definition of health - unchanged since 1948...

- “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

...to an ecological definition - Last JM. Dictionary of epidemiology. IEA, 1995:73

- "A state in which humans and other living creatures with which they interact can coexist indefinitely."





AN EXISTENTIAL CHALLENGE:
Climate Change

“A triumph that I could swim in such ferocious conditions but a tragedy that it's possible to swim at the North Pole.”

Lewis Gordon Pugh, July 16, 2007



The Town of Huntsville declared an e...



...touched down in Midland.



Flooding along the Big East River...



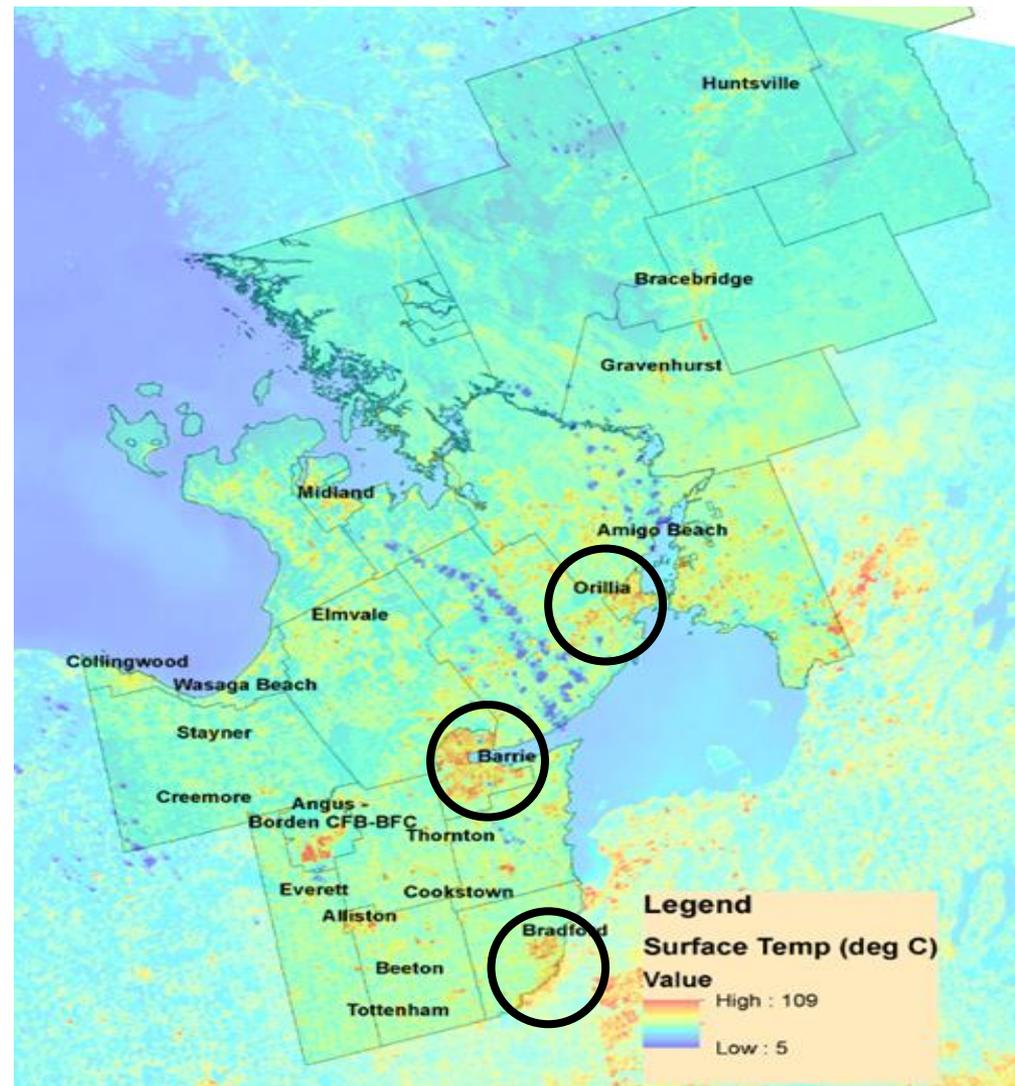
...ensive property damage in a small geographic area...



URBAN HEAT ISLAND

Can be reduced by

- installing green roofs
- enhancing urban tree canopy
- decreasing black surfaces

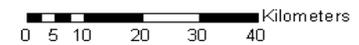




Wildfire Hazard for the District of Muskoka

Legend

- Extreme Wildfire Hazard
- High Wildfire Hazard
- Roads
- Highways
- District of Muskoka
- Simcoe County
- Water

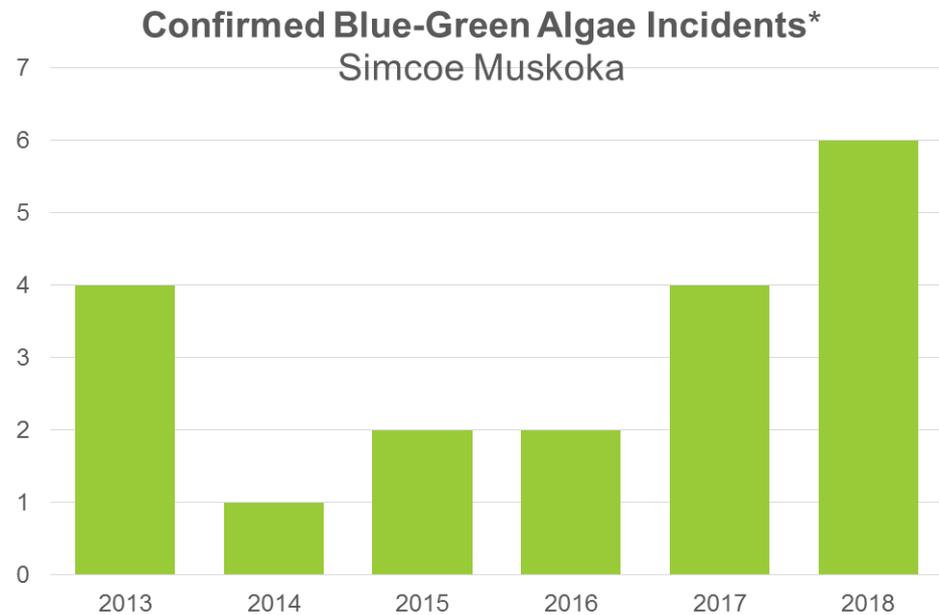


Data Sources: District of Muskoka; Statistics Canada

Date create: February 17, 2017

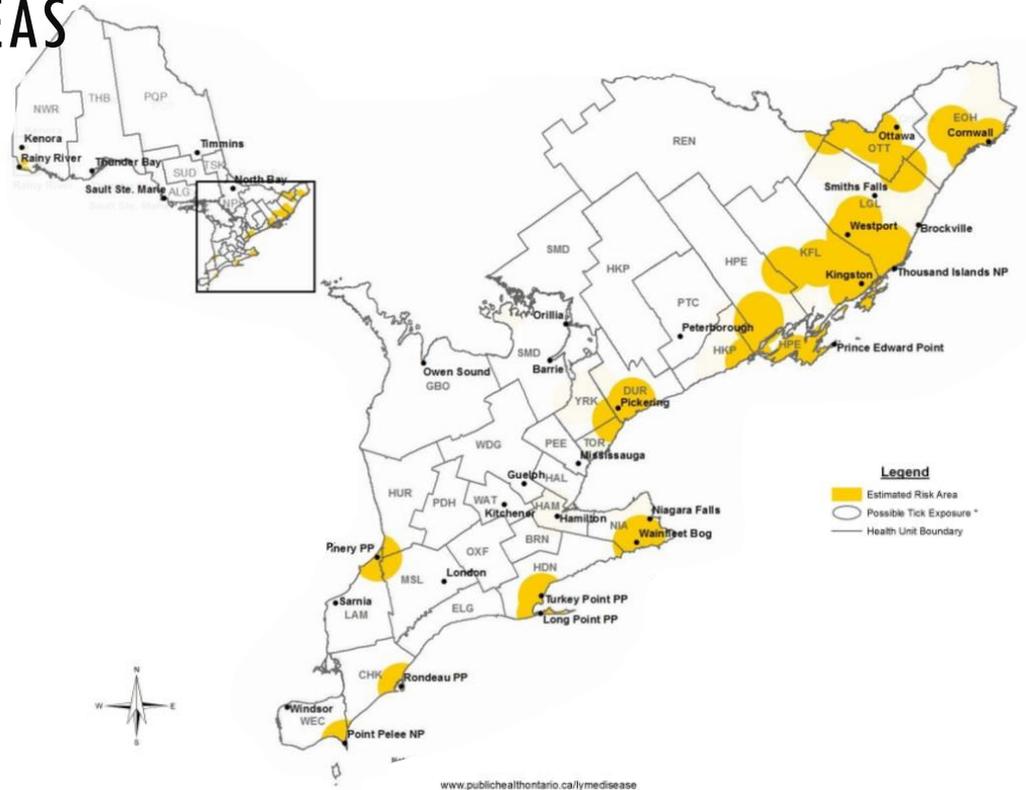
BLUE-GREEN ALGAE

**The number of reported blooms confirmed each year depends on a number of variables (e.g., weather).*



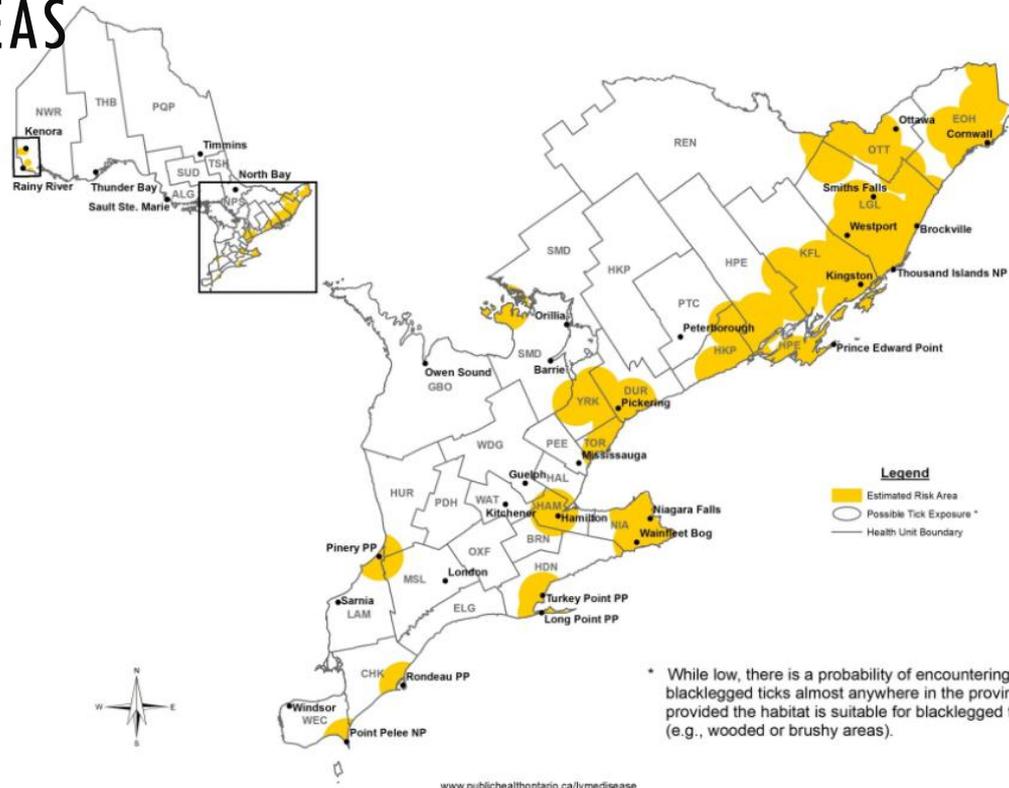
ESTIMATED RISK AREAS

Ontario Lyme Disease
Map 2015



ESTIMATED RISK AREAS

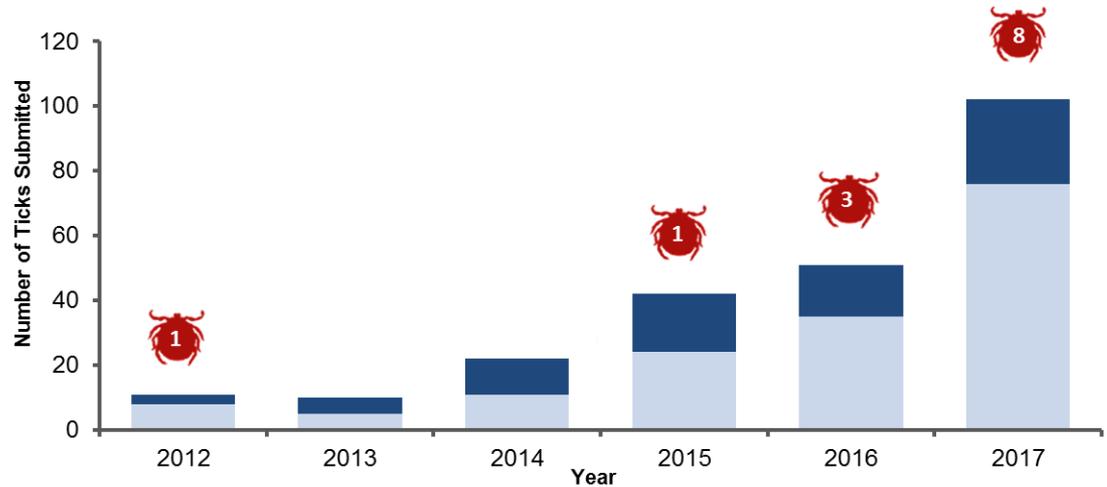
Ontario Lyme Disease Map 2018



TICK SUBMISSIONS

Blacklegged Tick Submissions to Heath Unit

- # of Blacklegged Ticks
- # Locally Acquired Ticks
- # Positive for Lyme Disease



Data Sources: Passive Tick Surveillance Spreadsheet, extracted May 8, 2018.

*Ticks are submitted to the health unit by those who have removed it from their (or another person's) body, and are aware to submit it to the health unit for testing. Submitted ticks may originate from anywhere that the submitter has traveled in recent days, and not necessarily from within Simcoe Muskoka. 66% of submitted ticks are acquired in Simcoe Muskoka

A HAPPY COINCIDENCE

Healthy / green design also mitigates and adapts to climate change.

LEED for Neighborhood Development criteria:

- Walkable Streets
- Compact Development
- Connected and Open Community
- Mixed-Use Neighborhood Centers
- Mixed-Income Diverse Communities
- Reduced Parking Footprint
- Street Network
- Transit Facilities
- Transportation Demand Management
- **Access to Civic and Public Spaces (including greenspace)**
- Access to Recreation Facilities
- **Local Food Production**
- **Tree-Lined and Shaded Streets**
- Neighborhood Schools
- **Green Infrastructure and Buildings**

WE HAVE OVERCOME BEFORE



FINAL THOUGHTS

- Like the built environment, we are rediscovering the importance of the natural environment.
- Maintaining and building greenspace in and between our communities is essential to our health.
- We also need greenspace and parks to address climate change.