

TORONTO  
JANUARY 8, 2015



# CONNECTING THE DOTS ON CLIMATE DATA IN ONTARIO

The background of the lower half of the page features a teal grid pattern. Overlaid on this grid is a white line graph with several data points connected by lines, creating a jagged path across the bottom. The text is contained within a dark blue rectangular box.

THE ENVIRONMENTAL  
COMMISSIONER'S  
**ECO CLIMATE DATA**  
ROUNDTABLE

## CLIMATE DATA: WHY IT MATTERS

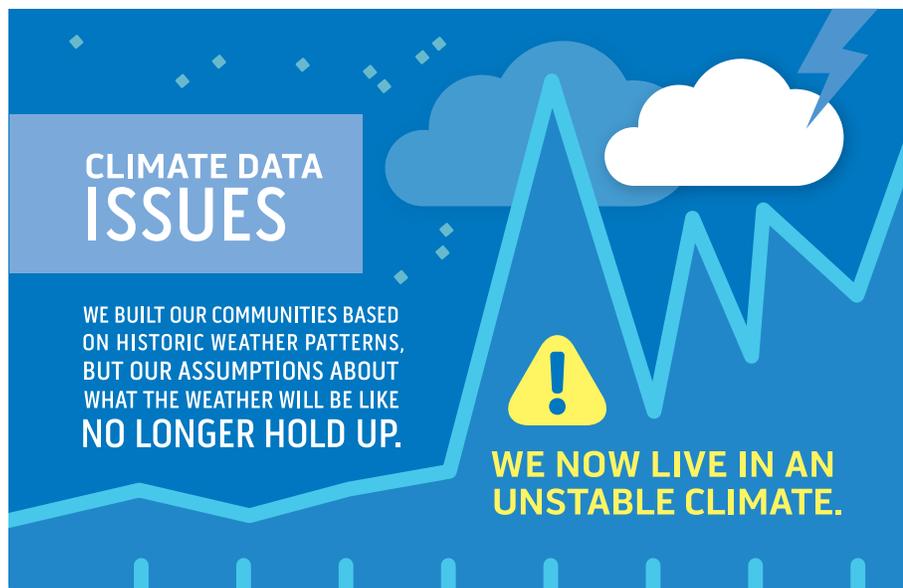
Ontario's communities are built based on historic weather patterns. Homes are built in areas that are believed to be safe from flooding and other natural hazards. Roads are built to withstand typical seasonal weather. Farmers plant and harvest crops based on usual growing seasons.

But past assumptions about the weather no longer hold up.

### WE NOW LIVE IN A CHANGING CLIMATE.

Climate change doesn't just mean that temperatures are rising; it also means more unpredictable and extreme weather. Ontario's communities and economies are now routinely threatened by weather that would have been considered freakish in past decades.

Countless business, personal and government decisions rely on assumptions about what the future climate will be. Many of these decisions are long-term; the roads, buildings, transit, sewers and power grids being built today are meant to last. But now "1-in-100 year" storms, which are often the threshold for resilient design, are happening more frequently than in the past. If major decisions aren't based on revised climate assumptions, communities will face significant costs in the future. Many communities are already coping with costs of unprecedented storm damage. Decisions that reflect the past climate are no longer good enough.



CHECK OUT OUR VIDEO "WHY CLIMATE DATA MATTERS" on the ECO YOUTUBE CHANNEL: <https://www.youtube.com/ecocomms>

## ONTARIO'S CLIMATE DATA NEEDS

Where can decision makers find credible projections of the future climate? And what are the emerging climate data needs of Ontario decision makers? A Roundtable, hosted by the Environmental Commissioner of Ontario in early 2015, focused on these and related questions. Expert presentations and animated discussions among climate data producers, intermediaries and end users illuminated the many facets of this rapidly developing field.





# THE ROUNDTABLE HIGHLIGHTED:

Page numbers refer to the full report, available at: [eco.on.ca](http://eco.on.ca)

## ONTARIO'S CLIMATE DATA LANDSCAPE

(see Ryan Ness's presentation, at p. 10)

Some climate data are hard to find (e.g., buried in academic journal articles), some are proprietary and cost money, and most are just not easy for non-scientists to understand how to use. It's also challenging for decision makers, who often aren't climate science experts, to determine which climate projections are reliable.

## THE URGENCY FOR DECISION MAKERS

(see David Lapp and David MacLeod's presentations at p. 10 & p. 14)

Infrastructure decisions are long-term investments of public dollars. They can amount to billions of dollars. To make sure money is spent wisely, and ensure the safety and well-being of communities, things need to be built right the first time.

## THE RISKS OF MAINTAINING THE STATUS QUO

(see Ewa Jackson's presentation at p.20 and Ryan Ness's presentation, at p. 10)

When decision makers can't decide what climate data to use (or how to use it), there is a risk that they will act based on inappropriate data, or worse, they won't act at all.

## THE DIVERSITY OF DATA NEEDS

(see David MacLeod and Ewa Jackson's presentations at p. 16 and p. 20)

Some end users need downscaled climate data. Others don't need downscaled data or can't afford it (e.g., smaller municipalities). Some end users need long-term averages, while others need extremes.

## THE RICH AND BEWILDERING RANGE OF CLIMATE DATA SOURCES

(see Ian Smith, Kevin Anderson and Richard Peltier's presentations at p. 34, p. 30, & p. 38)

Updated and Ontario-specific climate data do exist. Tons in fact. Data are being produced in universities, government departments, and insurance companies. End users generally want highly localized climate data that accounts for local geographic features (e.g., the Great Lakes and the Niagara Escarpment). The problem for end users, however, is in knowing what data to use and how to use it.

## THE VALUE OF ACCREDITED OR STANDARDIZED CLIMATE MODELS

(see participant discussion at p. 42 and Richard Peltier's presentation at p. 38)

End users want expert guidance on which climate data to use. An authoritative body that evaluates existing climate data models and guides end users on how to use them would be helpful.

## THERE ARE HUGE OPPORTUNITIES FOR INNOVATION

(see presentations by Joe Greenwood, Sasha Sud, Alex Miller, and Rob Wesseling at p. 48 – p. 54)

There is an opportunity for the public, private sector and academia to work together in new and innovative ways to ensure climate data meets the needs of end users. It is essential that climate data be made understandable to the average person, something that can be achieved by people and/or technology (e.g., mapping, smartphone apps, etc.).

## THE NEED FOR CLIMATE DATA EDUCATION

(see participant discussion at p. 60)

It is crucial that end users understand the limitations of climate data and how they affect its usage.

## ONTARIO CAN LEARN A LOT FROM OTHER JURISDICTIONS

(see the presentations by Alain Bourque and Elizabeth Gibbons at p. 56 & p. 58 )

There are various ways that the government and the private sector can respond to the problems with climate data in Ontario. Ontario can start by learning from other jurisdictions (e.g., U.S., BC, and Quebec) that have developed approaches to curating and delivering quality local climate data to decision makers.

## POTENTIAL ROLES FOR THE PROVINCE

(See ECO Comment at p. 64)

Currently the provincial government provides climate data by funding academic climate modellers and making that data publicly available. However, it could play a more active role by providing additional guidance to end users about how to use that data. Although the government has begun to do so by offering climate data training sessions, more could be done.

# ADVICE TO THE ONTARIO GOVERNMENT

The Ministry of the Environment and Climate Change has committed to releasing an updated climate change strategy for Ontario before the end of 2015. A critical factor for this strategy's success will be the ease with which Ontario's diverse end users are able to access credible, useful climate data. The ECO encourages the Ontario government to use the proceedings of this Climate Data Roundtable as an introduction to the issue, and a catalyst for new approaches.

## ROUNDTABLE PRESENTATIONS

### THE CURRENT STATE OF CLIMATE INFORMATION AND DATA IN ONTARIO

- **Ryan Ness**, Senior Manager, Ontario Climate Consortium/Toronto and Region Conservation Authority

### EXPERIENCES AND NEEDS OF CLIMATE DATA USERS

- **David Lapp**, Manager of Professional Practice, Engineers Canada
- **David MacLeod**, Senior Environmental Specialist, City of Toronto
- **Ewa Jackson**, Manager, International Council for Local Environmental Initiatives (ICLEI) Canada

### SELECT CURRENT CLIMATE DATA INITIATIVES

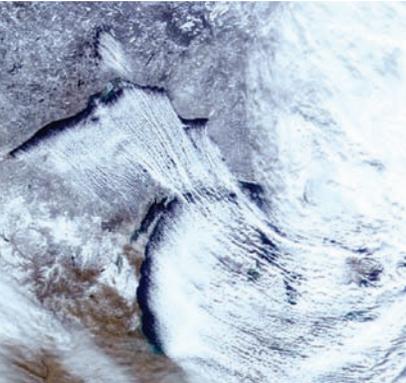
- **Kevin Anderson**, PhD, Manager, Climate Data and Analysis Section, Environment Canada
- **Ian Smith**, Director, Ministry of the Environment and Climate Change
- **Professor Richard Peltier**, Director of Centre for Global Change Science, Scientific Director of SciNet, University of Toronto

### ROLE OF THE PRIVATE SECTOR

- **Joe Greenwood**, Program Director and Sasha Sud, Energy Data Project Manager, MaRS Data Catalyst
- **Alex Miller**, President, Esri Canada
- **Rob Wesseling**, Executive Vice-President, The Co-Operators and Chief Operating Officer, the Sovereign General Insurance Company

### GOVERNANCE MODELS IN OTHER JURISDICTIONS

- **Alain Bourque**, CEO, OURANOS (Quebec)
- **Elizabeth Gibbons**, Director, University of Michigan Climate Center/Great Lakes Integrated Sciences and Assessments Center (U.S.).



For a more detailed description of the day's presentations, discussions and findings, see the full report at: [eco.on.ca](http://eco.on.ca)