



Environment
Canada

Environnement
Canada

Canada



Extreme Precipitation Events

City of London

June 8, 2016

Geoff Coulson

Warning Preparedness Meteorologist

Recent Headlines – Texas/France



Images from The Guardian
Daily Mail, CBS, Boston Globe
USAToday



Extreme Precipitation Events

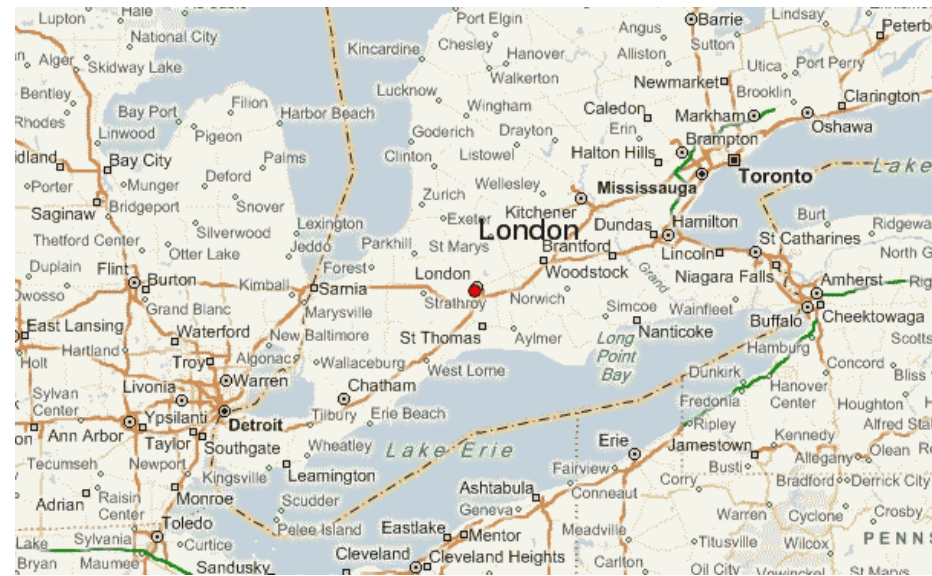


- Caused by...
 - Large storm systems (fall, winter, spring)
 - Localized, intense storms (late spring, summer, early fall)
 - Remnants of tropical storms/hurricanes (June to October)
 - Combinations of all of the above
- These events are happening now
- Difficult for long-term climate models to forecast extreme events/trends
- Research continues to better understand future extreme precipitation trends in Canada/Ontario



Complicating Factors - Changes in Population/Land Use in Southern Ontario

- More of us
- More buildings, pavement, less capacity to cope with heavy rainfall
- More infrastructure, aging infrastructure
- Increased vulnerability



Intergovernmental Panel on Climate Change (IPCC) – 5th Assessment in 2013

- In North America, many climate stresses that carry risk – particularly related to severe heat, heavy precipitation and declining snowpack – will increase in frequency and/or severity in the coming decades (very high confidence)
- Higher level of global temperature is likely to cause increases in annual precipitation over the northern half of the continent
- Much of North American infrastructure is currently vulnerable to extreme weather events and, unless investments are made to strengthen them, would be more vulnerable to climate change (medium confidence)

Canadian Extreme Precipitation Trends

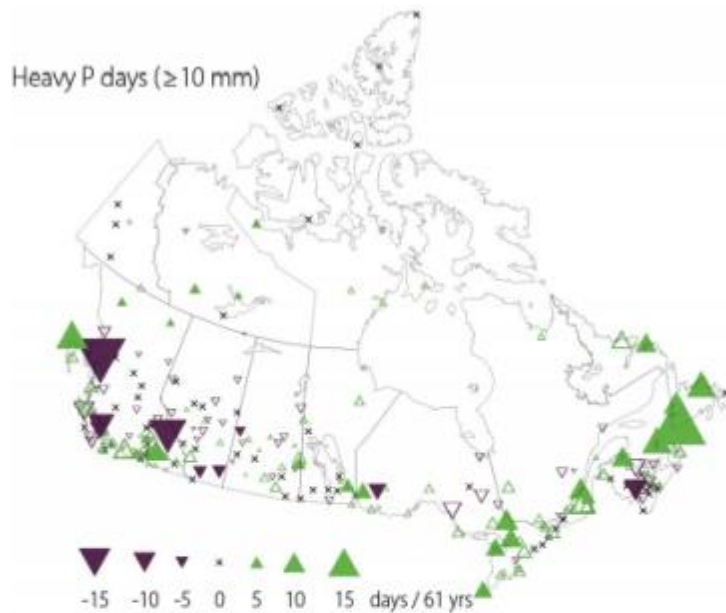


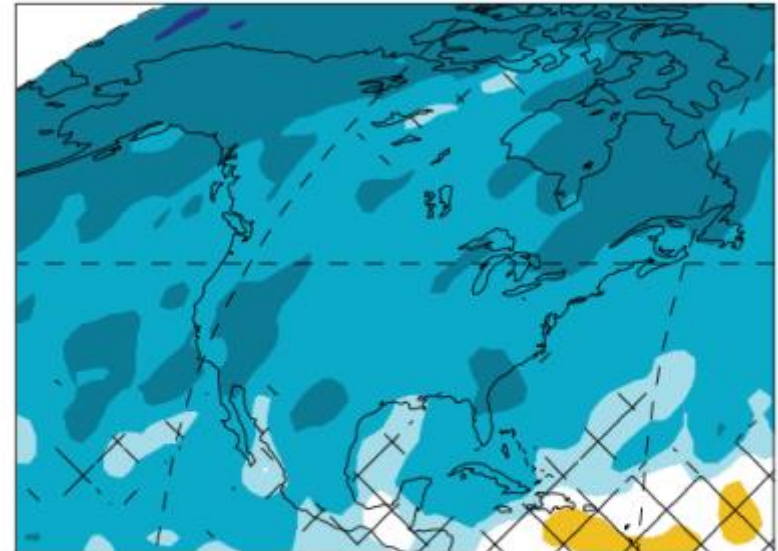
FIGURE 10: Trends in extreme precipitation for 1950-2010. Upward- and downward-pointing triangles indicate positive and negative trends, respectively. Filled triangles correspond to trends significant at the 5% level. The size of the triangle is proportional to the magnitude of the trend. The legend may not include all sizes shown in the figure. The symbol 'x' denotes a trend near zero (Source: Vincent and Mekis, 2006, updated).

1950-2010



Environment Canada / Environnement Canada

(b) Extreme Precipitation
RCP4.5 2046-2065



2046-2065

Implications of Increase in Extreme Rainfall Events

- Current 1 in 20 year rainfall in London (24 hour event) is around 85 mm
- Implication is that in the 2046 to 2065 timeframe a 1 in 20 year rainfall (24 hour event) could approach 100 mm
- Where 1 in 20 year event implies that the event has a 5% chance to occur in any given year





Thank you!

