



CANADIAN HISTORICAL AND PROJECTED CLIMATE TRENDS

Durham Region Natural Environment Climate Change Summit
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**CANADIAN
CENTRE FOR
CLIMATE
SERVICES**



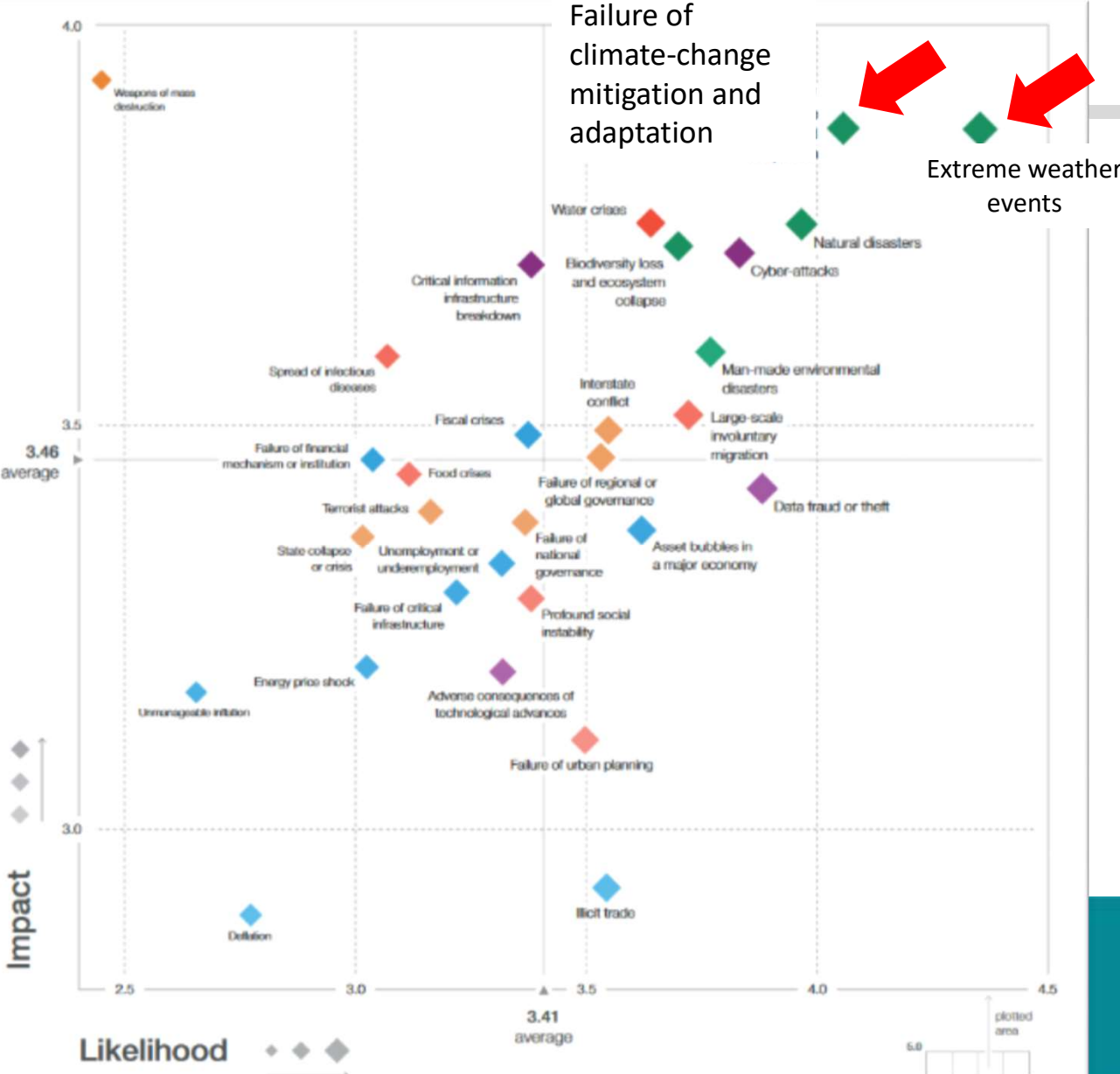
WEATHER AND CLIMATE



Climate is the long-term behaviour of weather over time



WORLD ECONOMIC FORUM 2018 GLOBAL RISKS REPORT



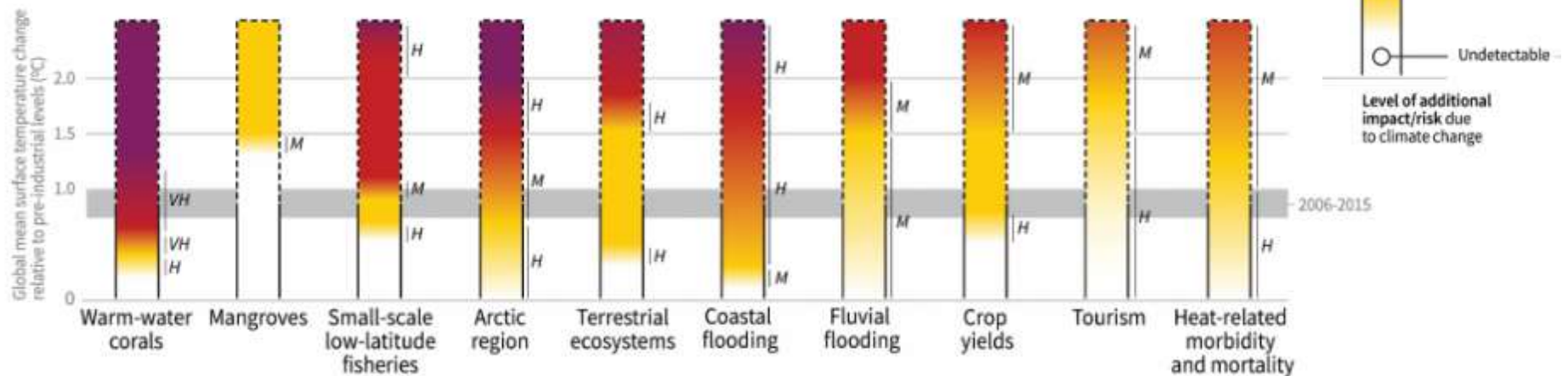
Extreme weather events and Failure of climate-change mitigation and adaptation are the biggest risks



IPCC Special Report: Global Warming of 1.5°C

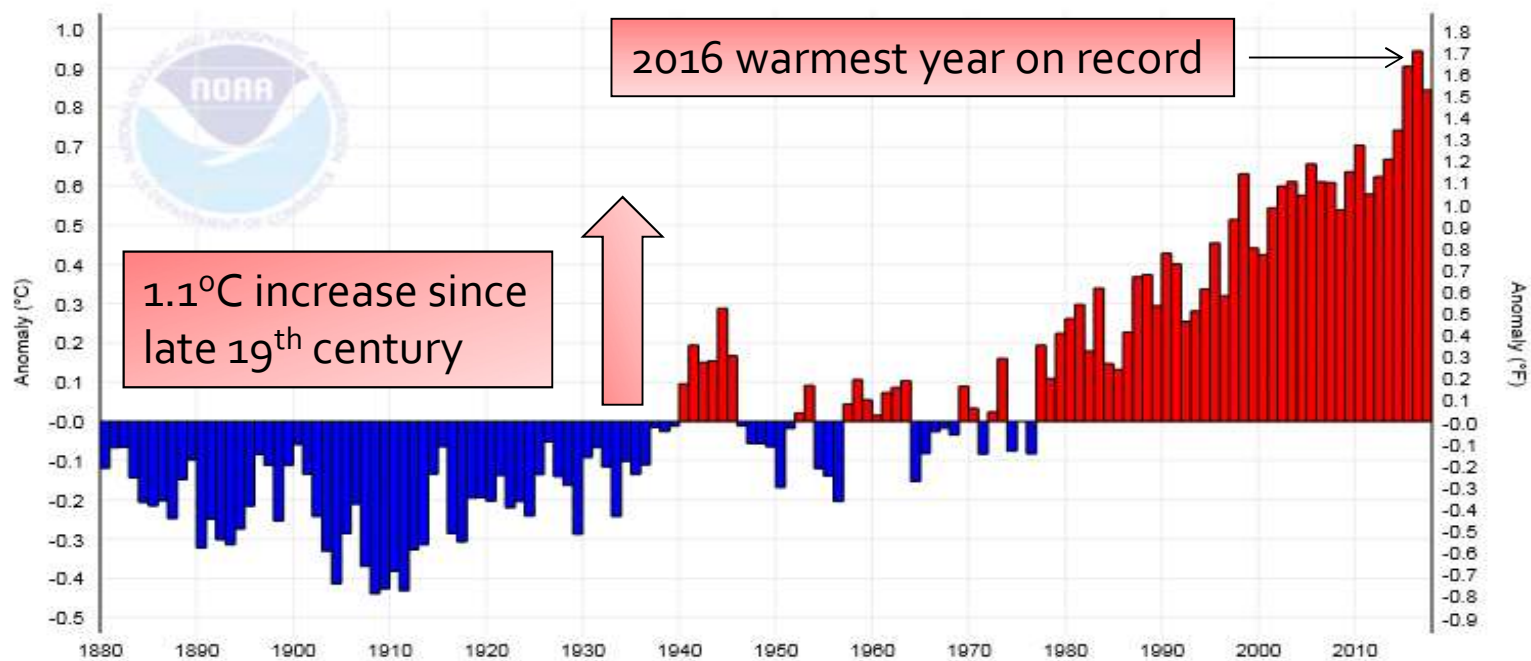
Even at an increase of 1 °C there will be moderate impacts globally

Impacts and risks for selected natural, managed and human systems



WARMING IS UNEQUIVOCAL

Global Land and Ocean Temperatures Anomalies
(January – December 1880-2017)



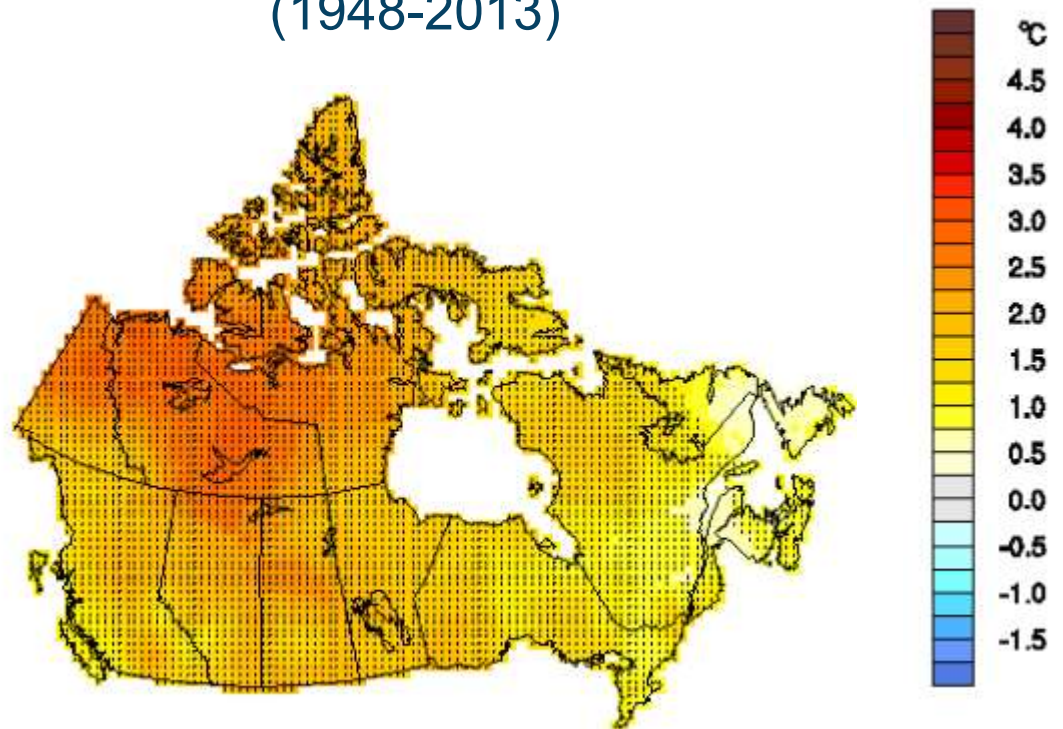
* IPCC Fifth Assessment

TEMPERATURE TRENDS HISTORICAL

Annual temperatures averaged across Canada have warmed by 1.8°C over the past 70 years

Changes are regionally dependent with temperatures rising faster in the North

Annual Temperature Mean
(1948-2013)

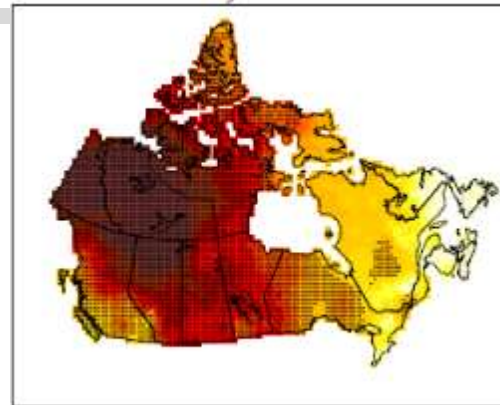


TEMPERATURE TRENDS HISTORICAL

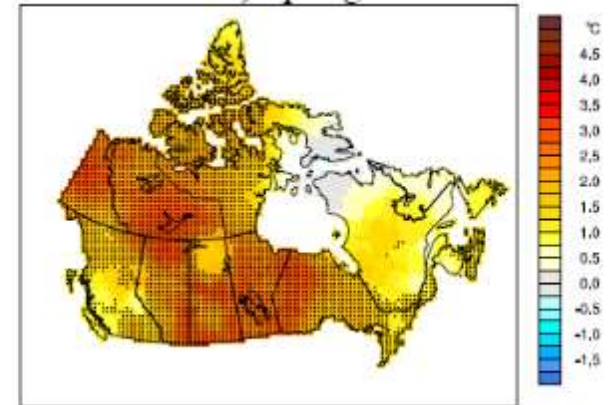
Seasonal Mean
Temperature
trends
(1948-2012)

Seasonal
changes show the
greatest changes
in winter for
Canada

a) Winter



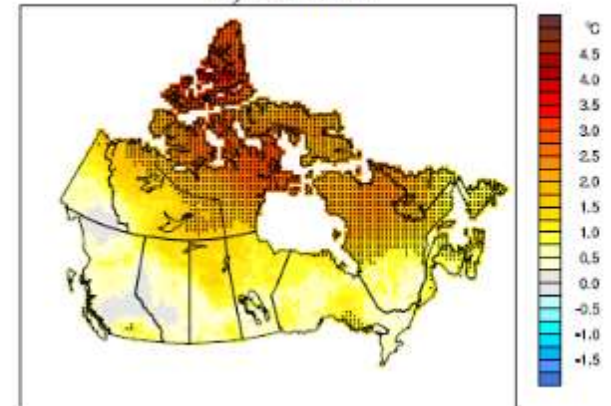
b) Spring



c) Summer



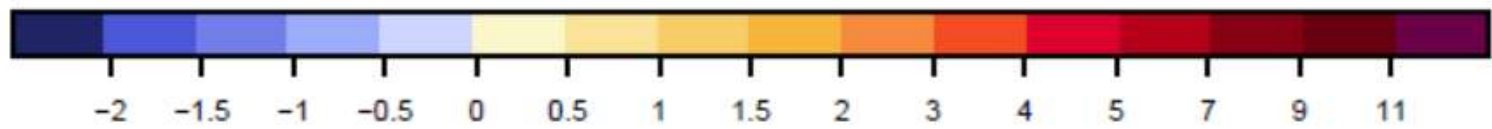
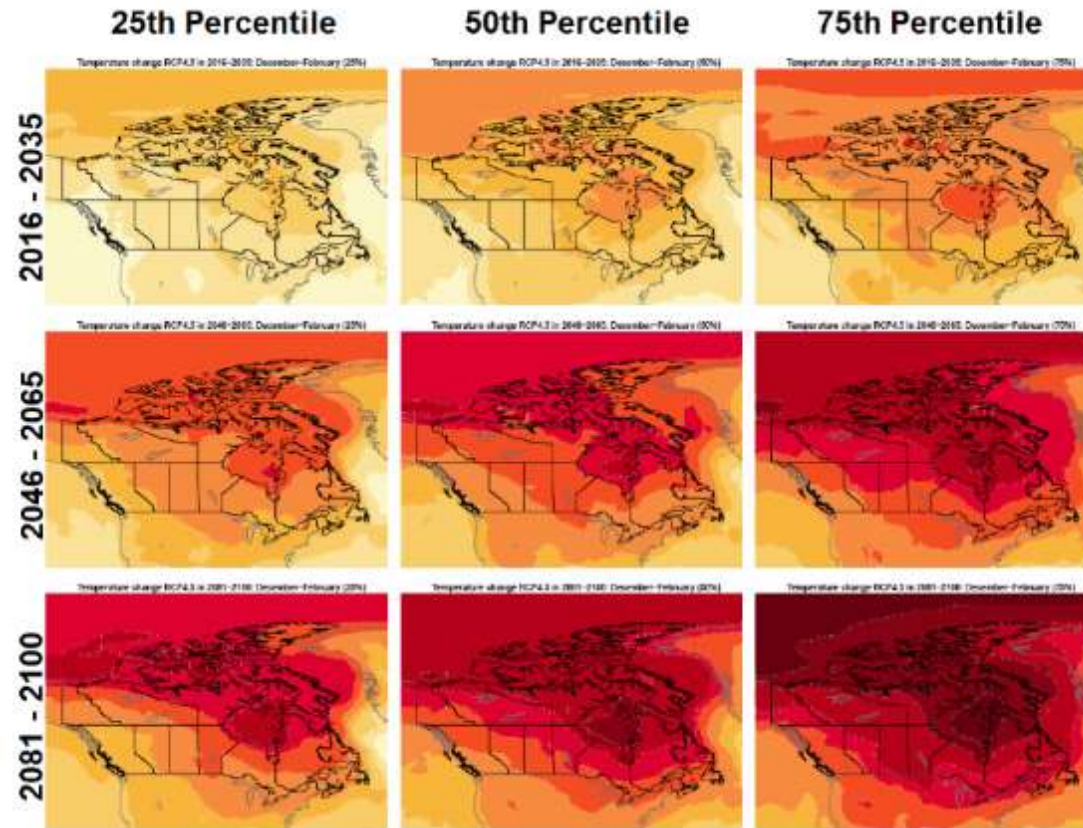
d) Autumn



PROJECTED CHANGE IN FUTURE TEMPERATURE

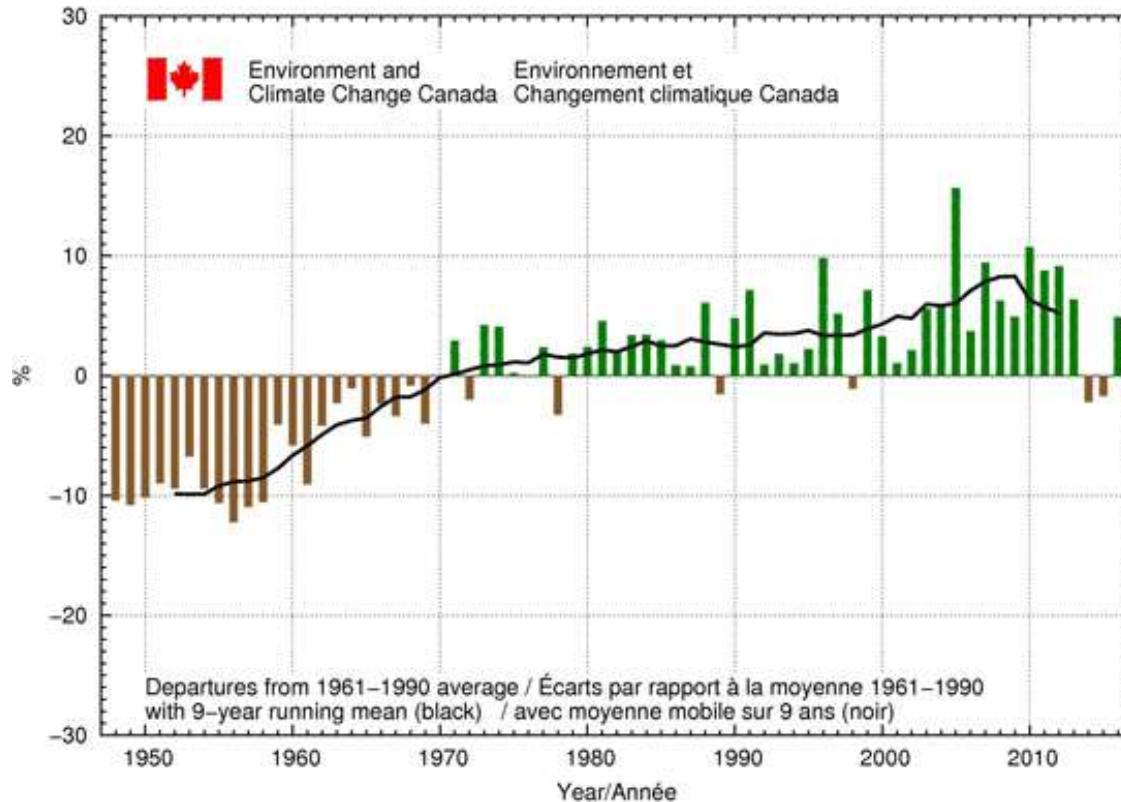
Winter temperatures projected to increase between 3.2 – 5.7°C by the end of the century

Average projected winter temperature change relative to 1986–2005 period. (CMIP5 multi-model ensemble; RCP4.5)



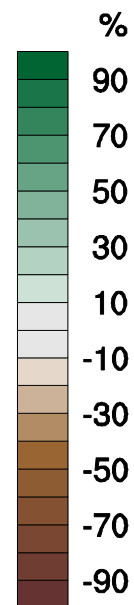
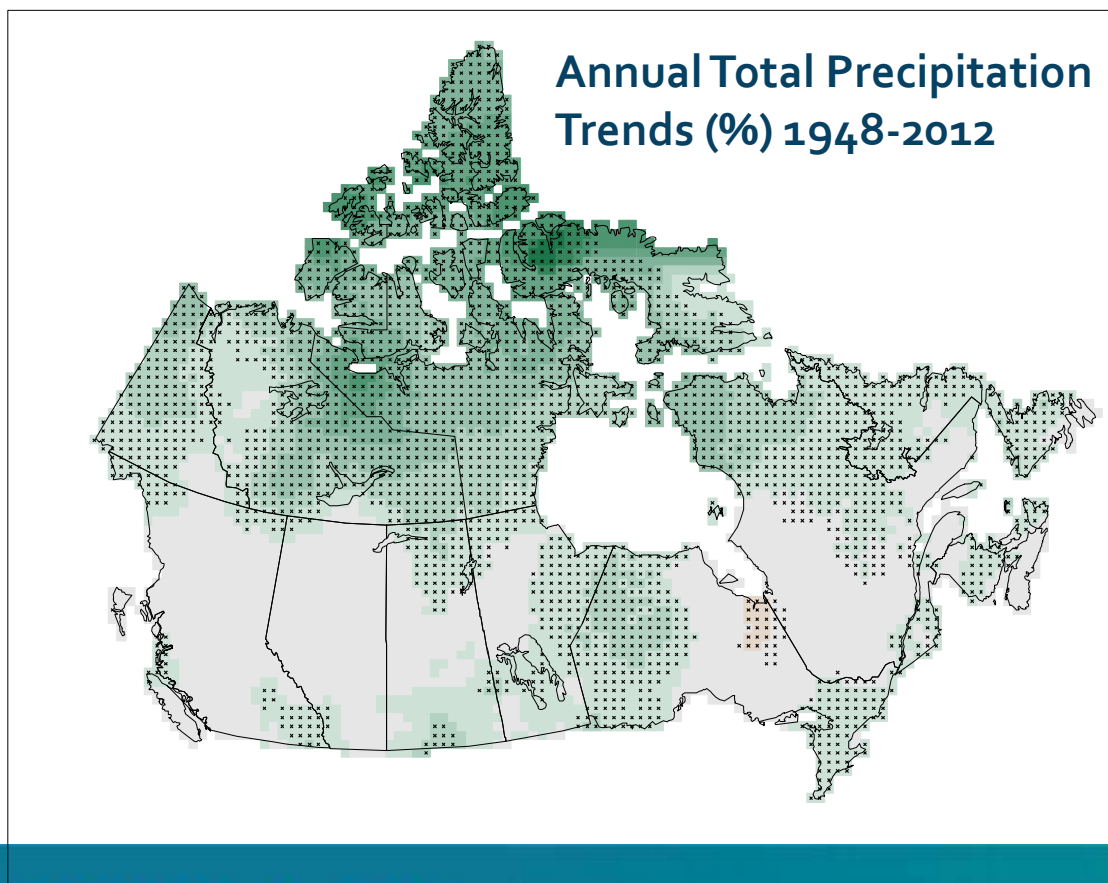
PRECIPITATION TRENDS HISTORICAL

Percent anomalies for Canada 1948-2016



Precipitation is more variable but in general Canada is wetter

PRECIPITATION TRENDS HISTORICAL



Precipitation
Is regionally
dependent

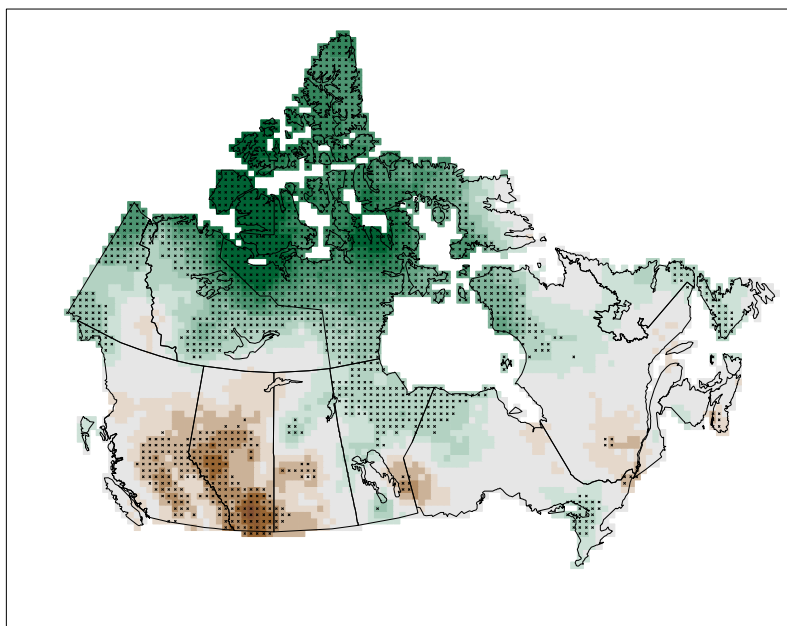


PRECIPITATION TRENDS HISTORICAL

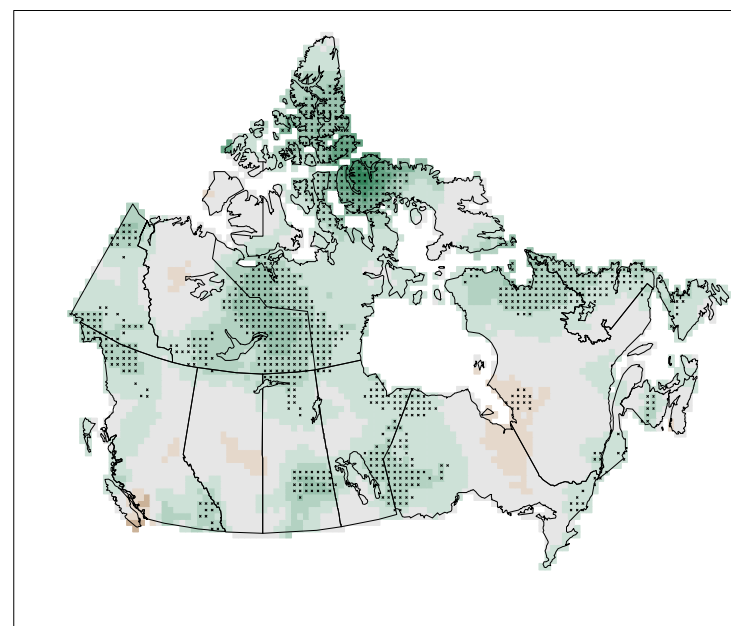
Winter

1948-2012

Summer



20% increase nationally

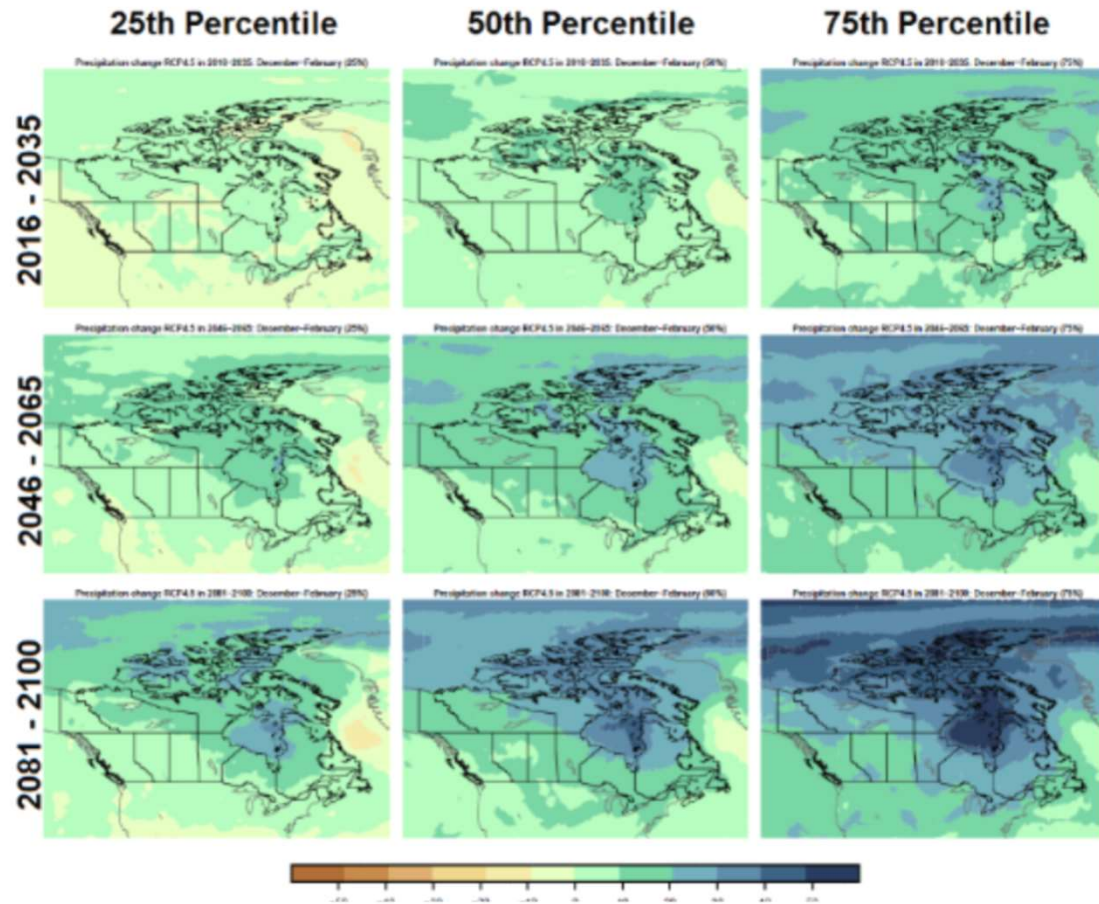


13% increase nationally

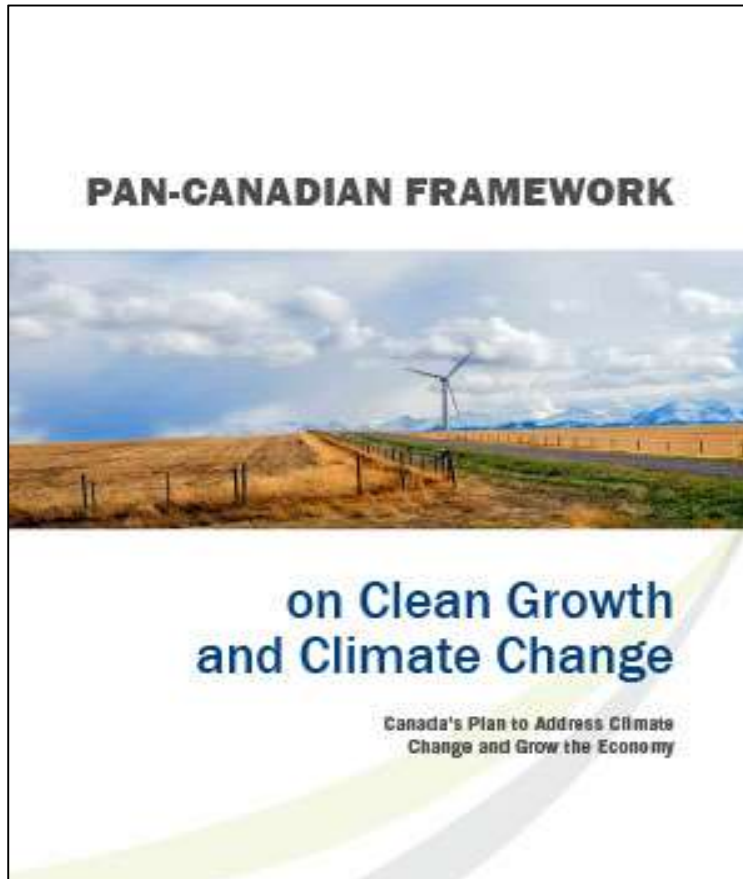
FUTURE PROJECTIONS PRECIPITATION

Precipitation projected to increase between 9.1 and 26.4 % by the end of the century

Average projected winter precipitation % change relative to 1986–2005 period. (CMIP5 multi-model ensemble; RCP4.5)



PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE



Pricing Carbon Pollution



Complementary mitigation actions across all sectors



Adaptation and climate resilience



Clean technology, innovation & jobs



Durham Region Natural Environment Climate Change Summit

Brought to you by: the Natural Environment
Climate Change Collaborative, with support from
the Region of Durham and Enbridge

thank you

thank you