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MEDIA RELEASE

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British Columbia should prepare for a different climate future

The findings from the Intergovernmental Panel on Climate Change's (IPCC) latest report re-affirms the science behind the human-caused climate change we have already seen and what we can expect in future, says Francis Zwiers, the director of the Pacific Climate Impacts Consortium (PCIC) and a vice chair of the IPCC's Working Group I.

Speaking at a public briefing in Vancouver this morning on the IPCC's Fifth Assessment Report (AR5) by Working Group I, Dr. Zwiers says the human influence on the climate system is clear, with the warming of the atmosphere and ocean, the diminishing amount of snow and ice, rising sea levels and the increasing concentrations of greenhouse gases (GHGs).

He says climate change occurs on a global scale but its effects are felt regionally, as can be seen by British Columbia's climatic trends. BC's Provincial Climate Data Set shows that between 1900 and 2012 the number of frost days per year have reduced by 24 days, while winter temperatures have risen by 2.1°C and summers by 1.1°C.

Zwiers says researchers at PCIC are projecting comparable changes for BC over the next 100 years, using the same climate simulations as the IPCC.

"Even under a moderate GHG emissions scenario, by the year 2100 this province is likely to be recording additional warming of 2.9°C during the winter months and a 2.4°C increase in the summer, with more winter warming in the north-east than elsewhere," he says.

Zwiers says the effects of these changes are significant. "Currently we are seeing three weeks less frost than we did at the start of last century. Fast forward another 100 years, and the difference could be more than seven weeks. This trend is already impacting on BC's winter transport and forestry operations, and has been linked to the ongoing mountain pine beetle infestation."

Zwiers says hydrology patterns will also be affected, with winters likely to see a 10 per cent increase in precipitation, and with summers possibly getting wetter up north and drier in the south. He says this will change the way river systems operate, with the warmer conditions reducing both the snow-pack and the resulting melt-off in spring and summer, impacting water supply and quality.

A more detailed breakdown of PCIC's climate forecast results is available on the next page.

Today's free public briefing at the WOSK Centre was co-hosted by PCIC and the Pacific Institute for Climate Solutions. The webcast of the event will be hosted at www.pics.uvic.ca

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BC Climate Facts—produced by the [Pacific Climate Impacts Consortium](#)

Historical (1900-2012 trend) based on the Provincial Climate Data Set

Temperatures have increased in BC

- ❑ Winter (December, January, February):
 - Temperatures increased 2.1 °C [0.6 to 3.4]°C over 1900-2012 [Amounts in square brackets indicate approximate 5 to 95% confidence intervals].
 - More warming in the north-east than elsewhere.
 - Frost days per year decreased 24 [17 to 32] days (over the period 1900-2011)
- ❑ Summer (June, July, August):
 - Temperatures increased 1.1 °C [0.6 to 1.5]°C
 - Summer temperatures have warmed more or less uniformly across BC

Precipitation appears to have increased (low confidence).

- Trend estimates are very uncertain because sparse precipitation observations during the first half of the 20th century make it difficult to estimate long term trends reliably.
- Winter precipitation increased 18.3% [-0.8 to 37.7]% over 1900-2012.
- Summer precipitation increased 19.2% [6.5 to 31.8]%

Future (change between 1986-2005 and 2081-2100) under a moderate emissions scenario (IPCC RCP4.5)

Long term warming and precipitation change will depend upon future greenhouse gas emissions

- The pattern of projected change is the same for all emissions scenarios, but becomes more pronounced with greater emissions.
- The IPCC projects global mean warming is *likely* to be in the range 1.1 °C to 2.6°C under RCP4.5

Projections for BC for 2081-2100 under RCP 4.5 [Amounts in square brackets indicate the *likely* range of possibilities].

- ❑ Winter temperature:
 - Warming of 2.9 °C [1.4 to 5.9]°C
 - More warming in the north-east than elsewhere
 - 31 [17 to 51] fewer frost days
- ❑ Summer temperature:
 - Warming 2.4 °C [1.3 to 4.3]°C
 - Warming roughly uniform across BC
- ❑ Winter precipitation:
 - Increase of 10.4% [-0.2 to 25.5]%
- ❑ Summer precipitation
 - Increase of 2.6% [-7.0 to 9.9]%
 - Possible moistening in the north and drying in the southern mainland and south central regions

Hydrology projections show most interior river basins are projected to exhibit increased winter flows, weaker and earlier spring freshet, and lower summer flows.