NUNAVIK AND NUNATSIAVUT ARE EXPERIENCING RAPID WARMING

SCIENCE BRIEF

RECOMMENDATION

- *Improvement are needed in weather forecasting and environmental prediction at regional and local scales.*

The vulnerability of the region to climate change has been highlighted in recent years due to an abrupt and unprecedented warming that began around 1993. This warming has contributed to wide-reaching and rapid environmental changes. For example, snow and ice cover duration are currently decreasing at a rate of about 1.0 day/year, ground temperatures have warmed by over 2°C with significant increases in active layer depth over permafrost. Glaciers in the Torngat Mountains lost approximately 20% of their total area between 2005 and 2007. Inuit knowledge indicates that these recent changes are outside the range of previous community experience. Together with more unpredictable weather, these changes are having wide-ranging impacts on human health, safety, municipal infrastructure and access to territory and resources. Climate model projections for the 2041-2070 period indicate a continuation of the observed warming trend as well as increased precipitation over the region (see figure below).

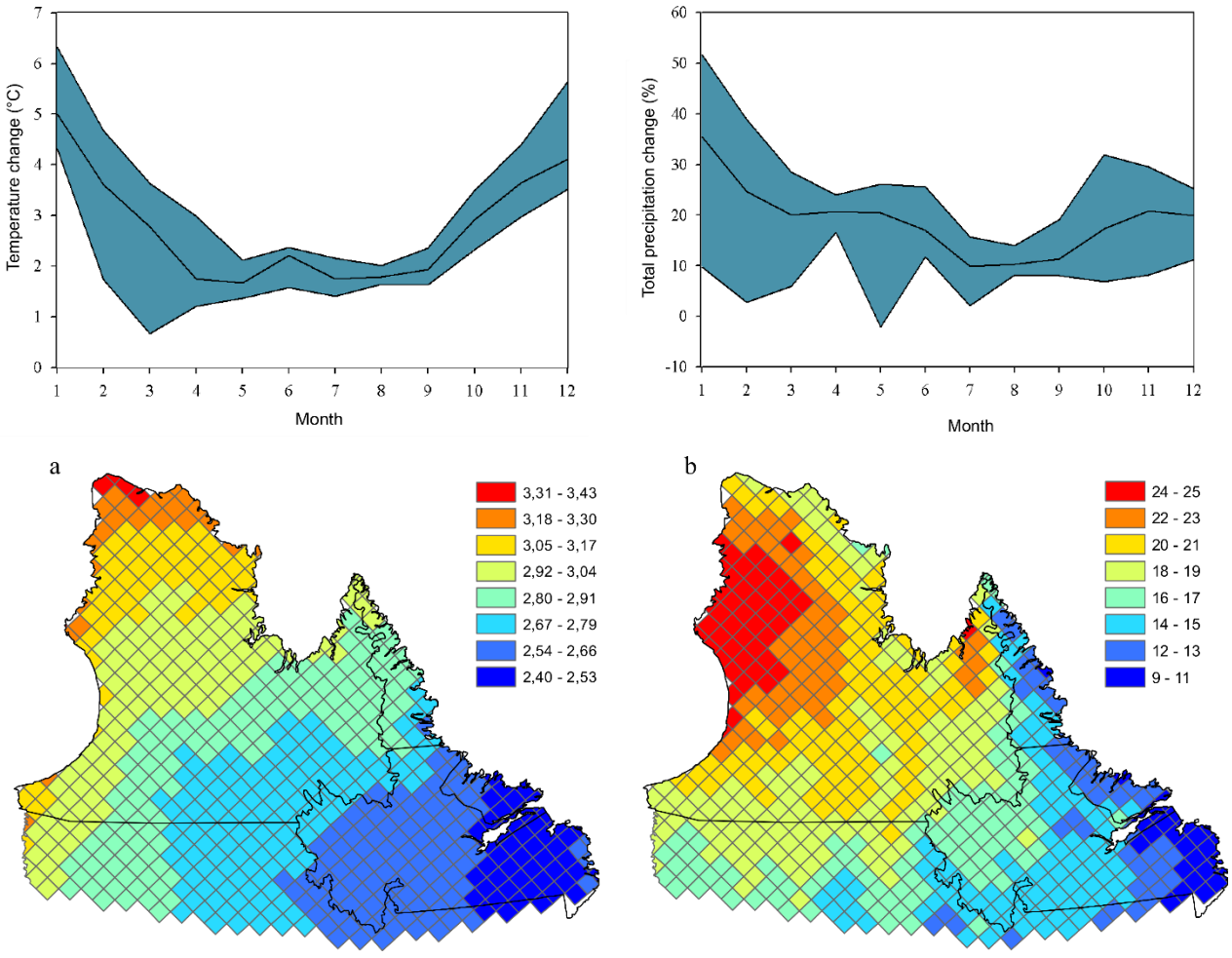

***Figure**: Top: Seasonal character of projected change in monthly mean temperature (left panel) and total precipitation (right panel) from six CRCM runs for 2050 period, averaged over all model grid cells in the study region. The outer lines represent the range in the six simulations. Bottom: Corresponding spatial pattern of projected change in (left) mean annual temperature (°C) and (right) mean annual total precipitation (%).*

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