

# Supplementary Material

## Advanced Forecasting of Drought Zones in Canada Using Deep Learning and CMIP6 Projections

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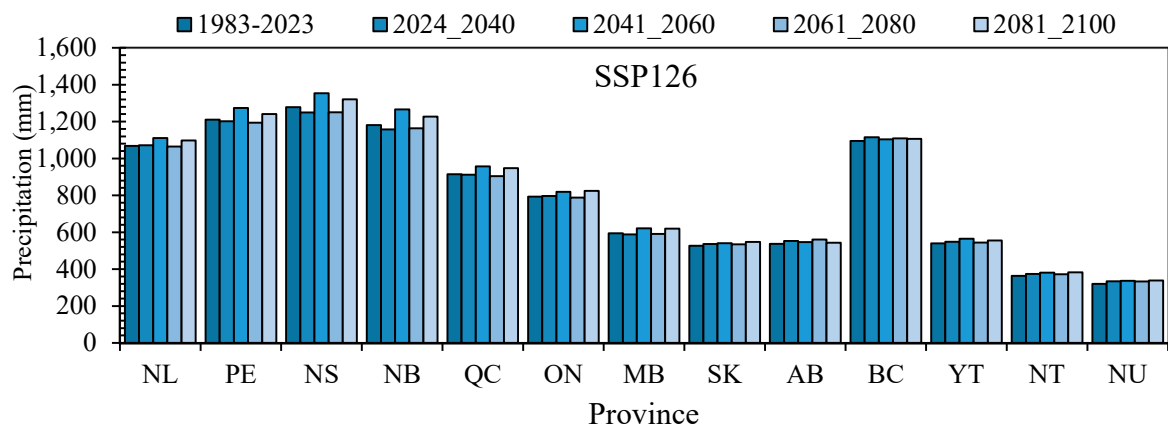
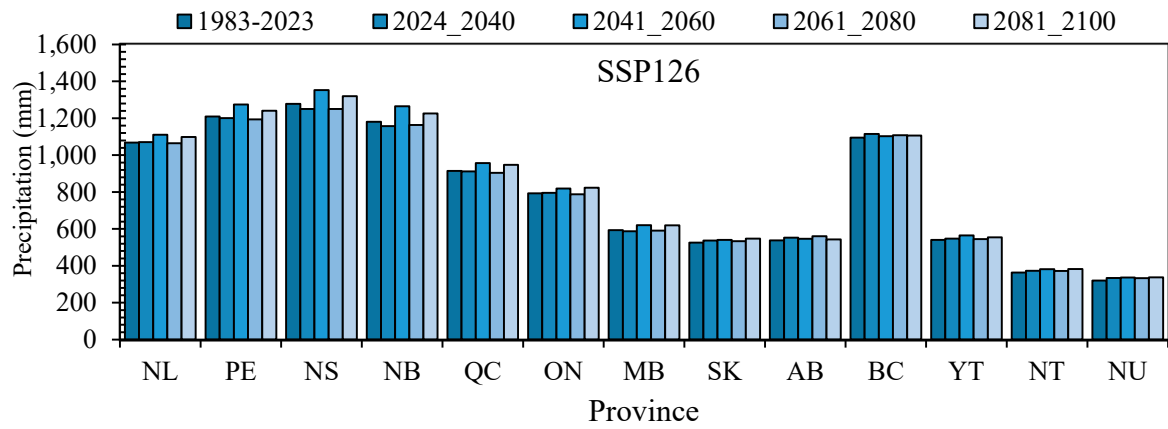
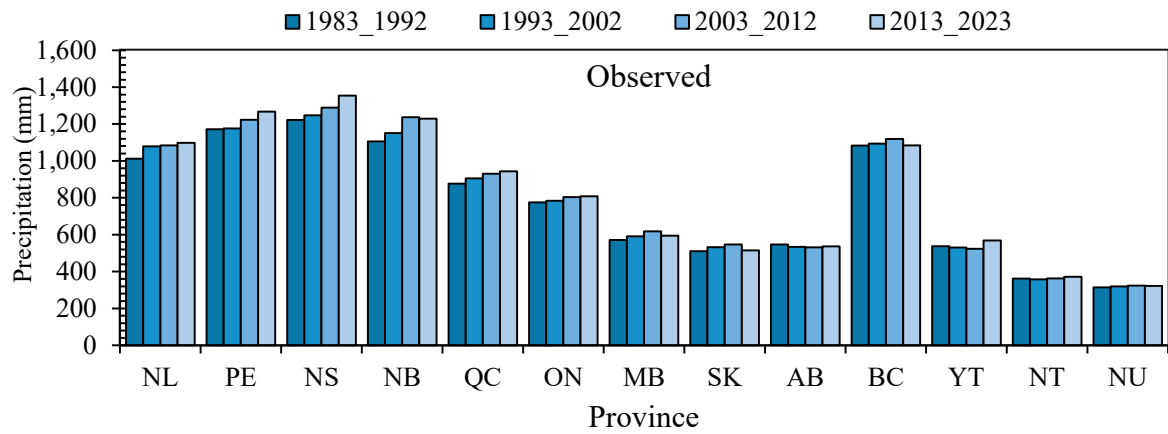
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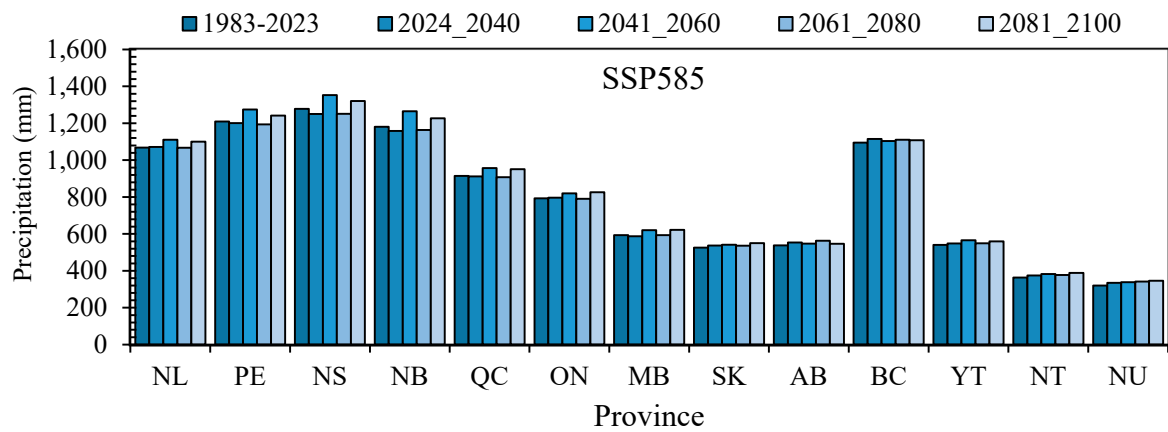
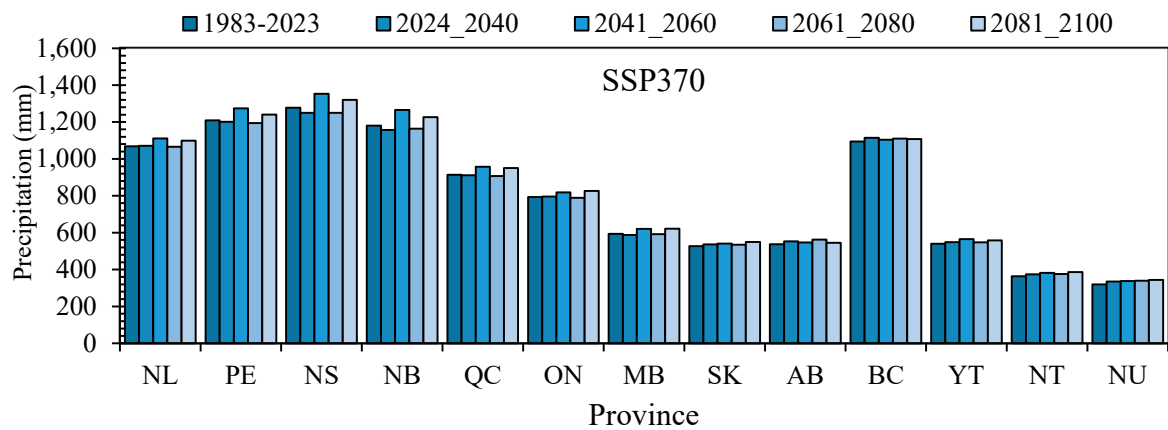
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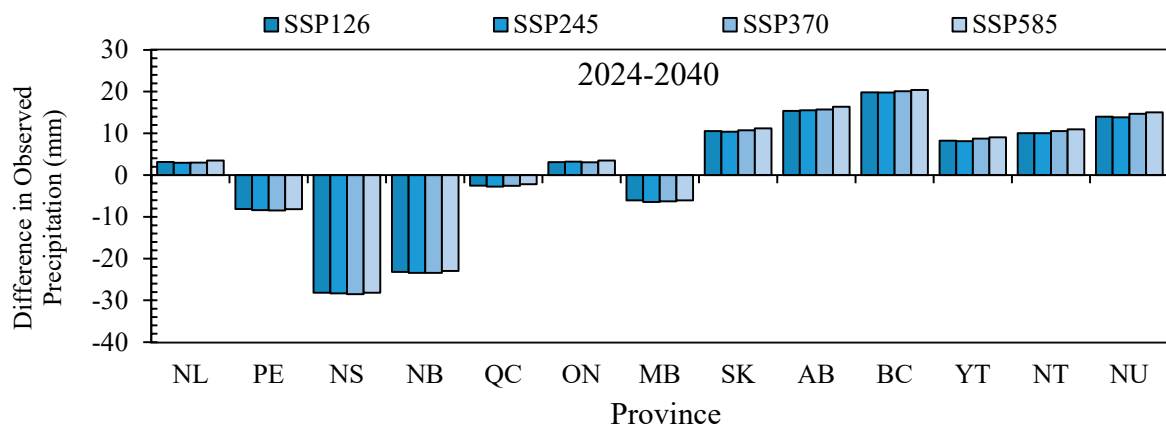
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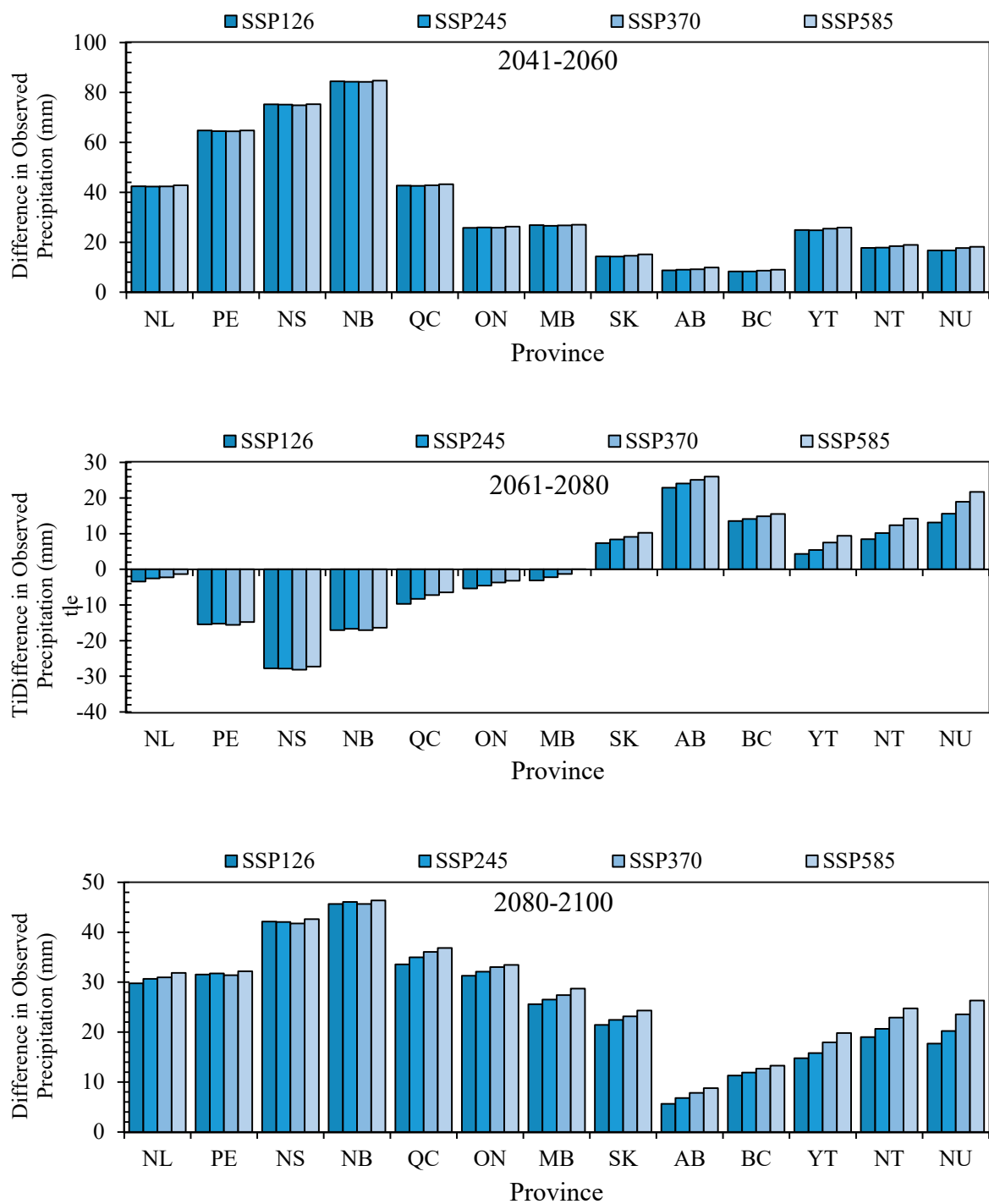
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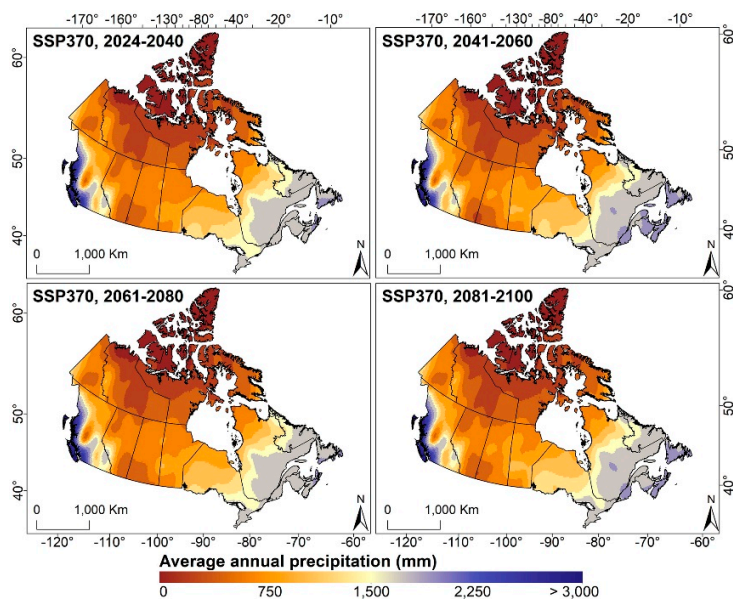
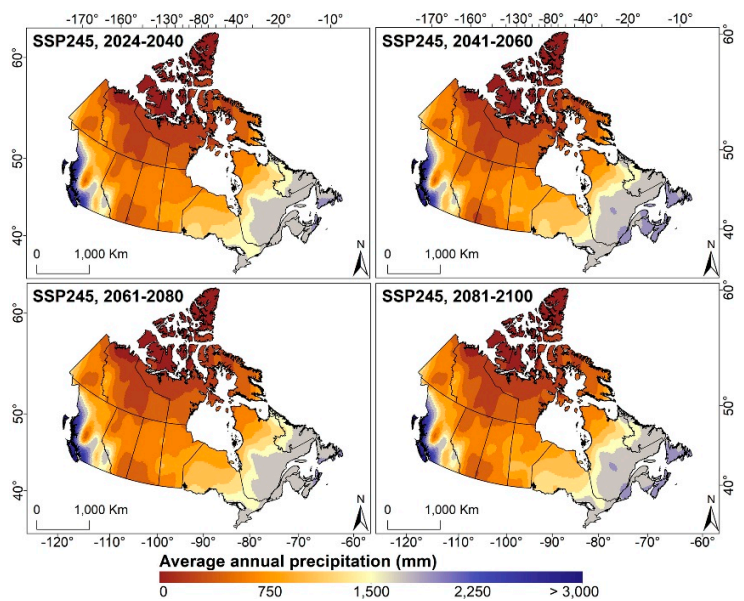
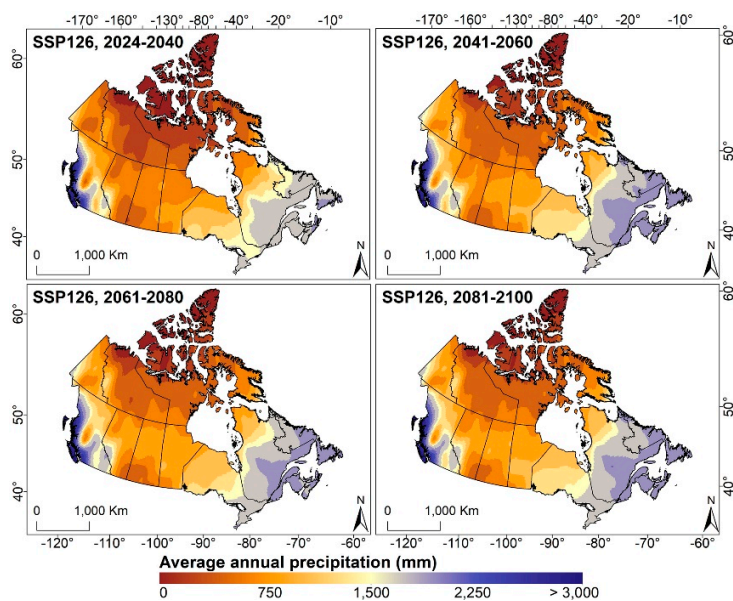
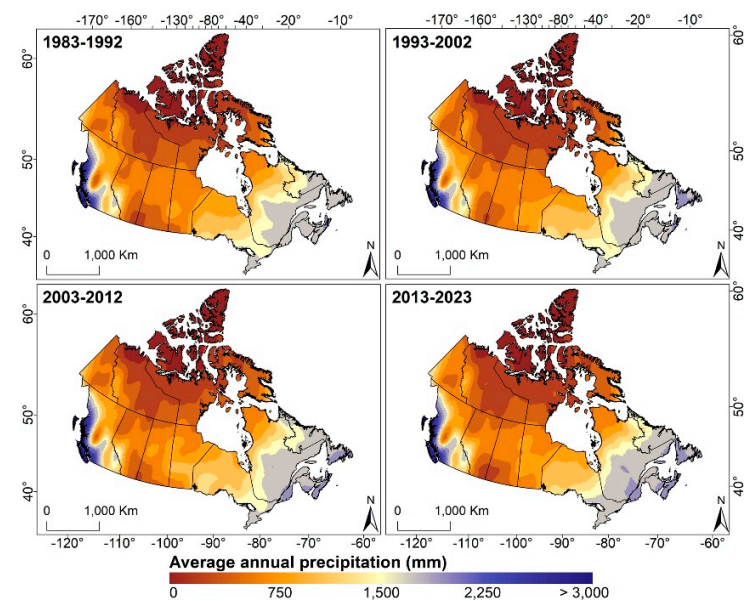


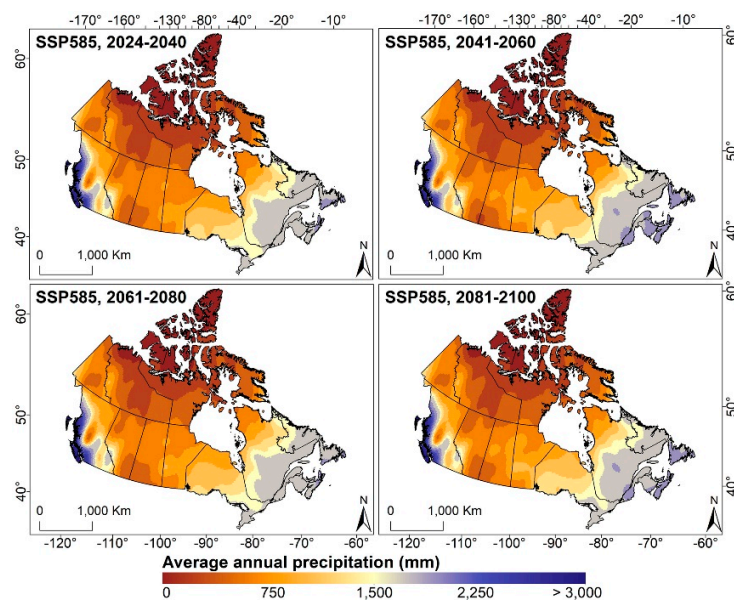
**Figure S1.** Precipitation variability across the 10 Canadian provinces and 3 territories, spanning from the observational period (1983–2023) to future projections (2024–2040, 2041–2060, 2061–2080, and 2081–2100) under five distinct scenarios (SSP126, SSP245, SSP370, and SSP585), employing the CanESM5 model within the CMIP6 framework.



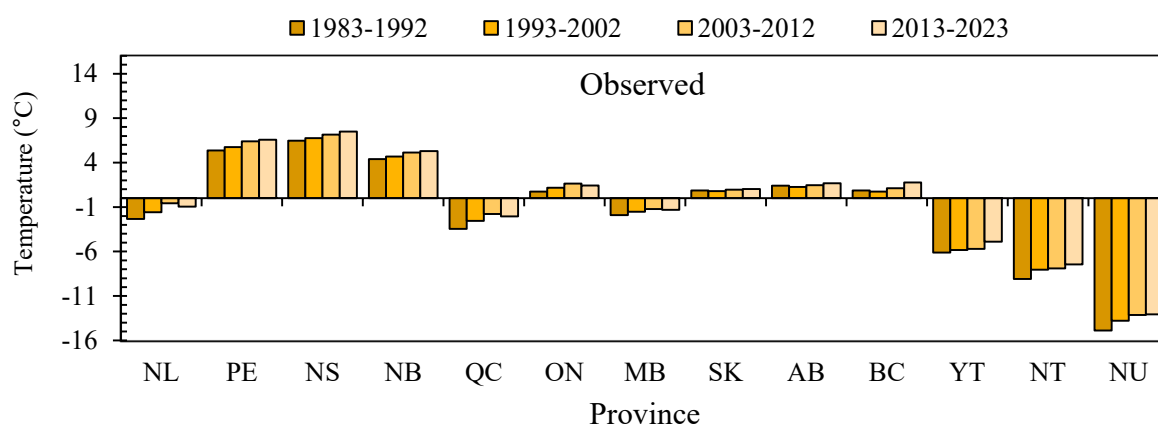


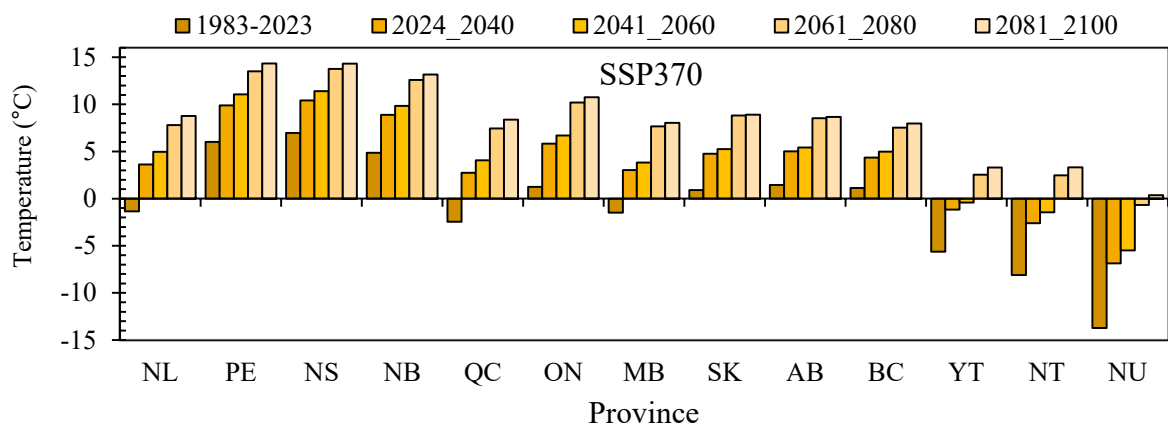
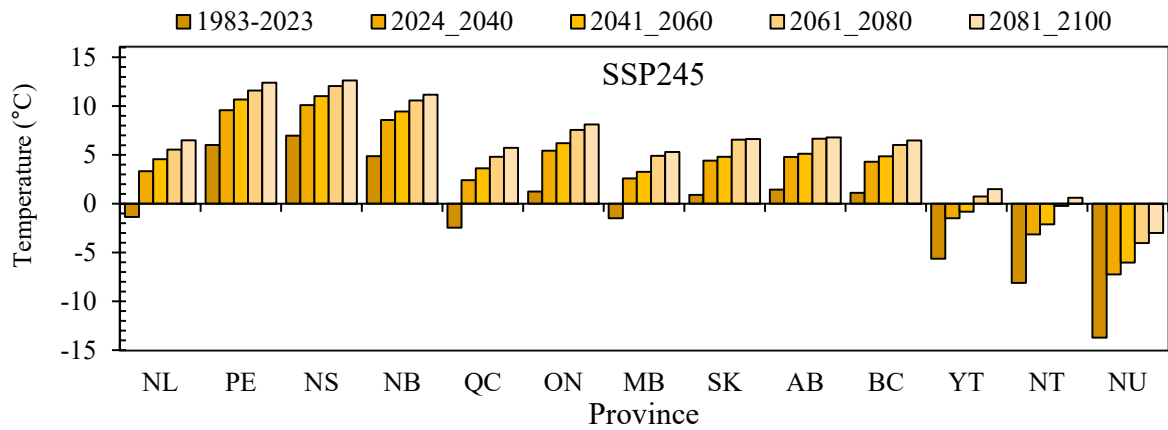
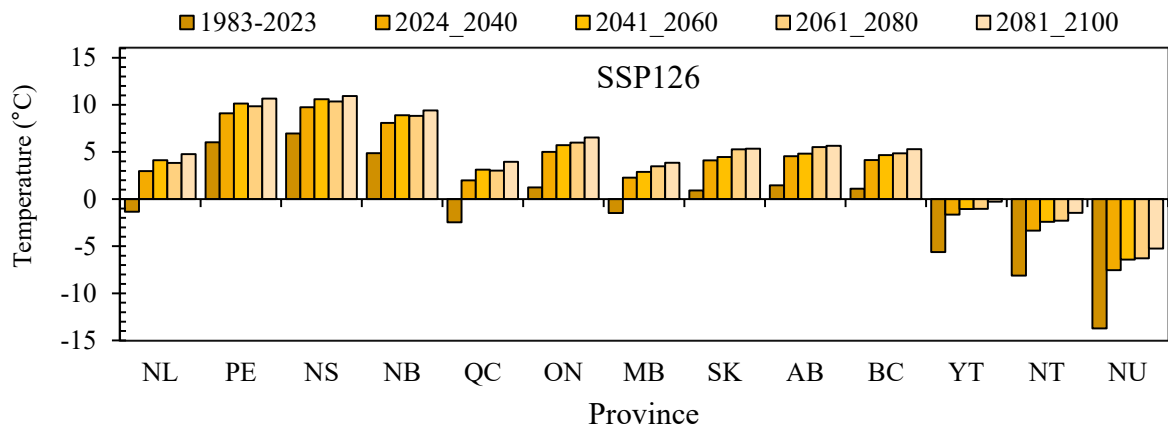
**Figure S2.** Precipitation changes relative to observed temperatures across the 10 Canadian provinces and 3 territories for each scenario

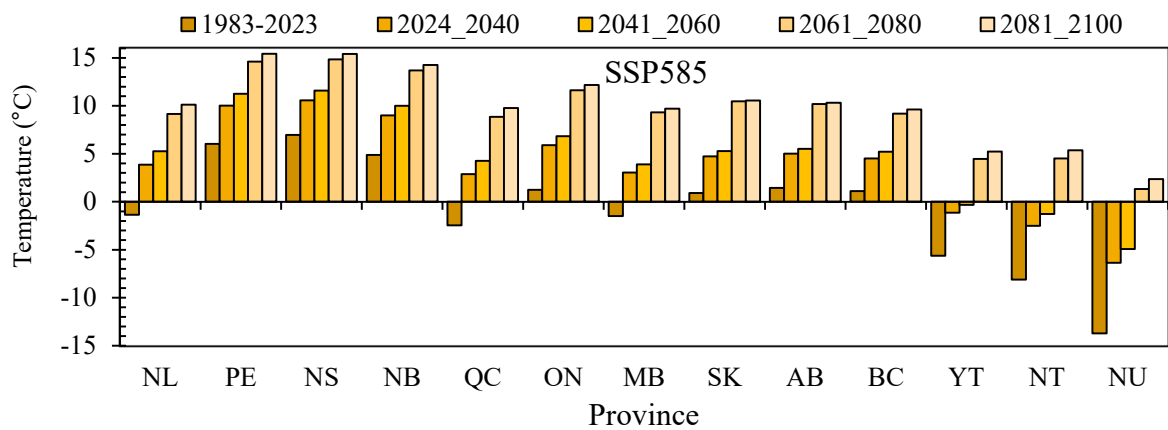




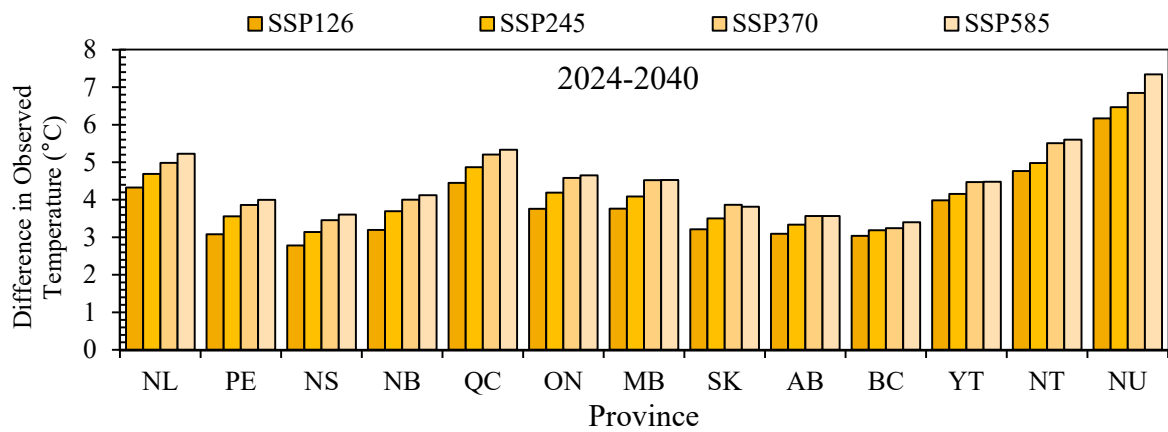
**Figure S3.** Zoning of Projected Average Annual Precipitation Anomalies in Canada (2024-2100) Compared to the Observed Period (1983-2023) using CanESM5 from CMIP6



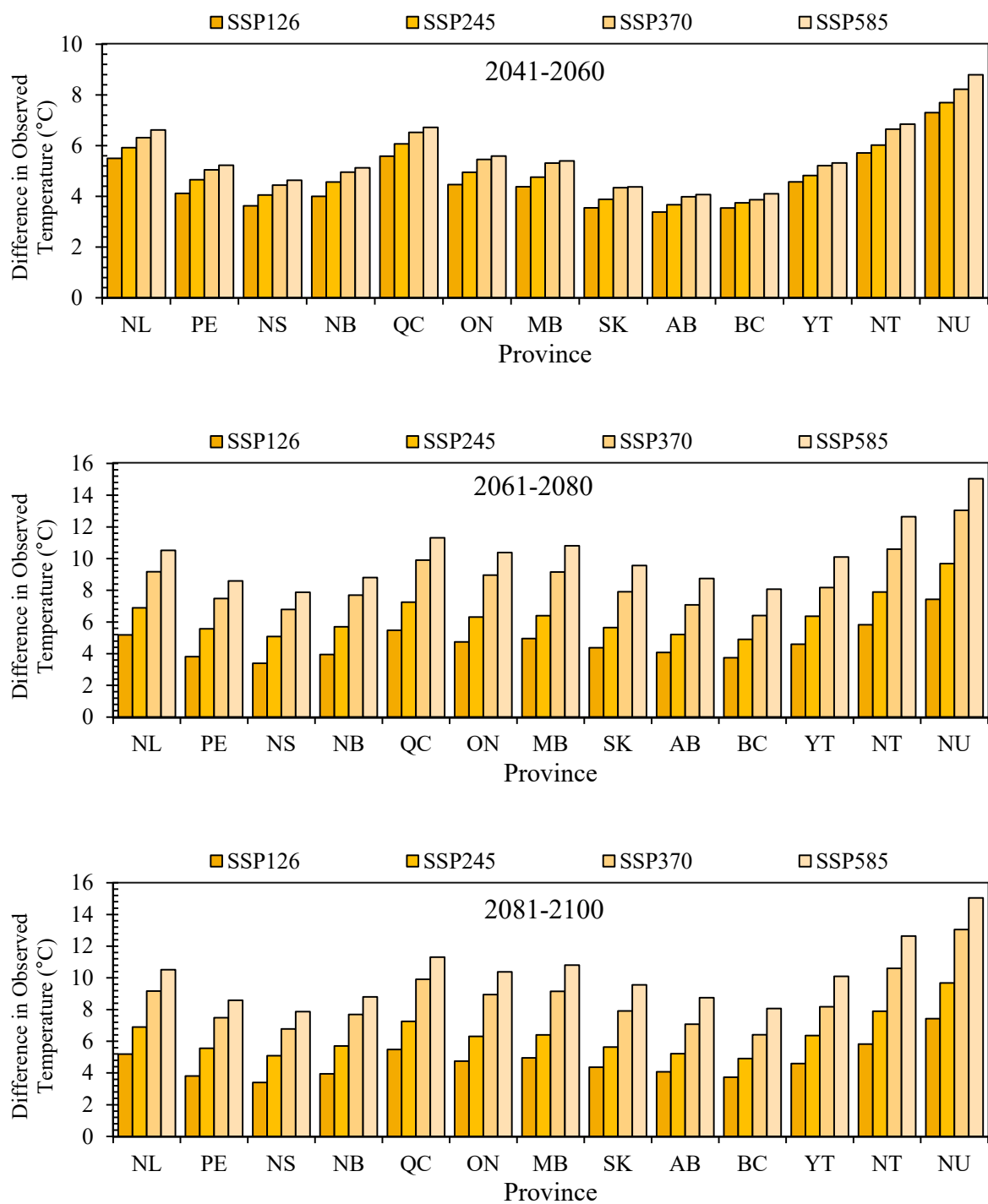




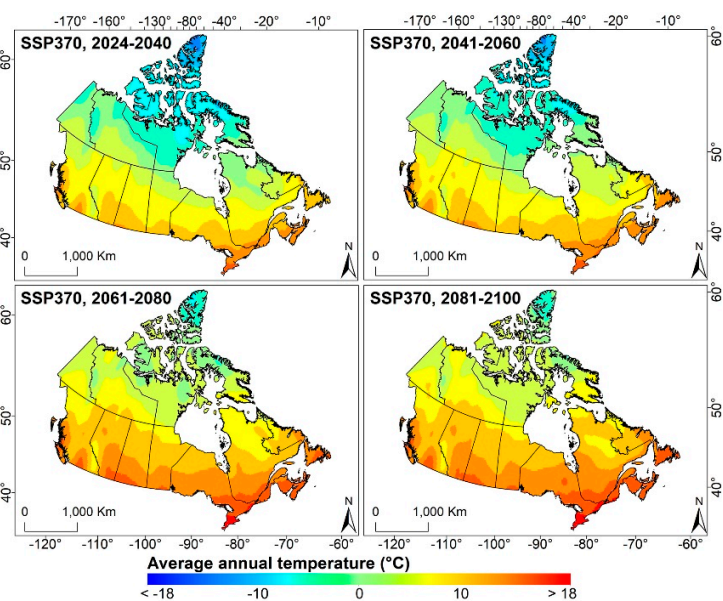
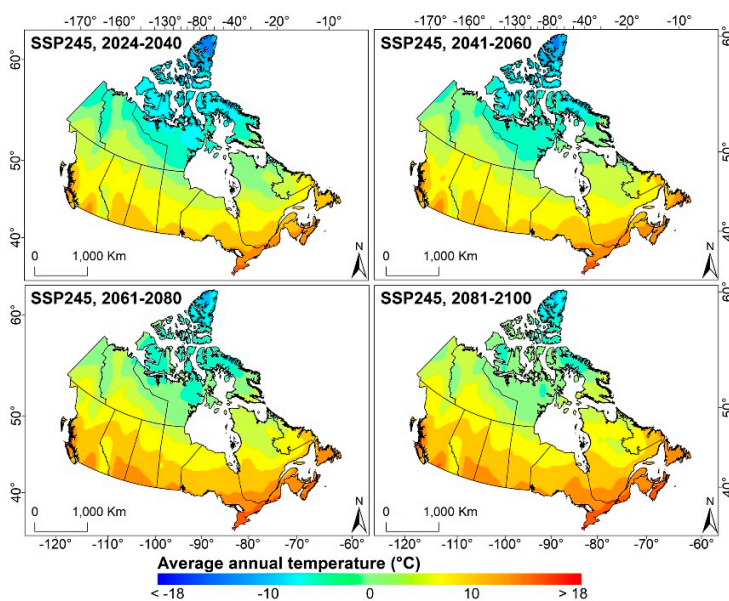
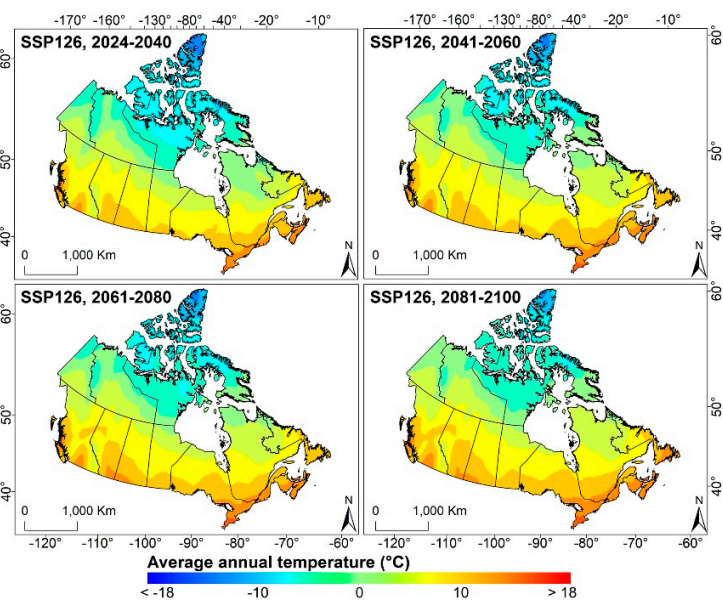
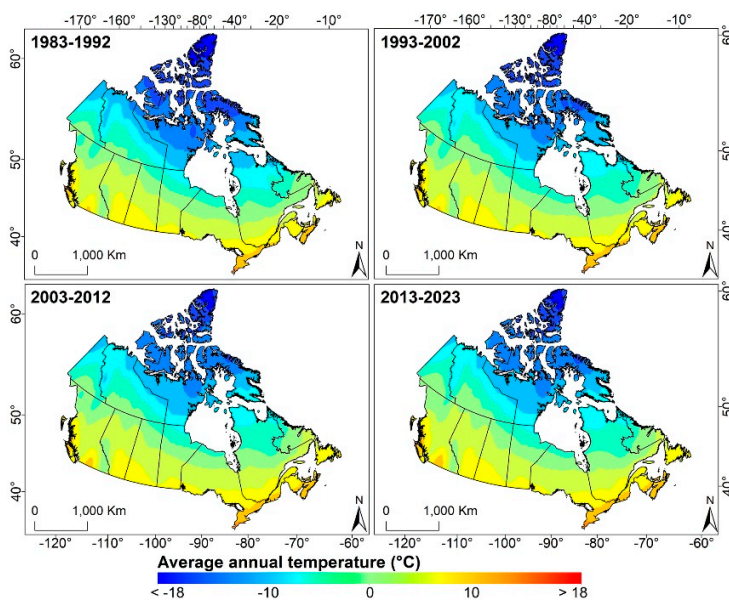
**Figure S4.** Temperature variability across the 10 Canadian provinces and 3 territories, spanning from the observational period (1983–2023) to future projections (2024–2040, 2041–2060, 2061–2080, and 2081–2100) under five distinct scenarios (SSP126, SSP245, SSP370, and SSP585), employing the CanESM5 model within the CMIP6 framework.

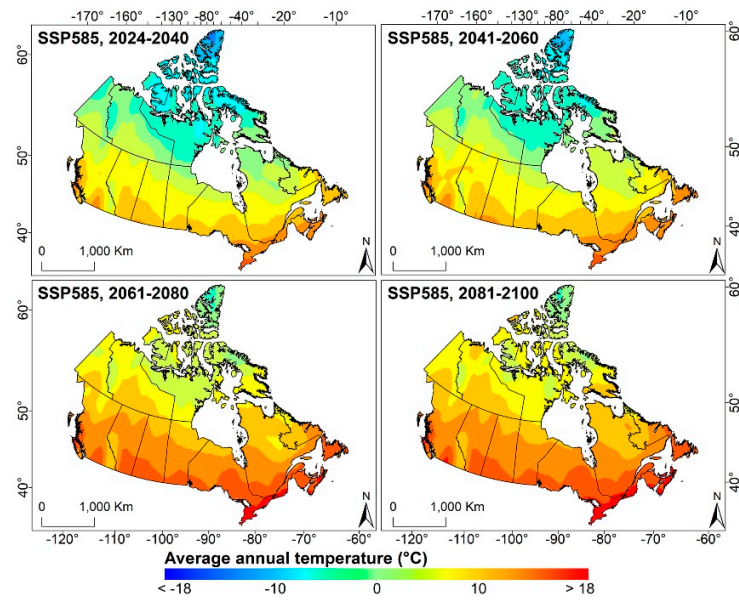






**Figure S5.** Temperature changes relative to observed temperatures across the 10 Canadian provinces and 3 territories for each scenario





**Figure S6.** Zoning of Projected Average Annual Temperature Anomalies in Canada (2024-2100) Compared to the Observed Period (1983-2023) using CanESM5 from CMIP6