Supplement of

Assessing the adequacy of traditional hydrological models for climate change impact studies: A case for long-short-term memory (LSTM) neural networks

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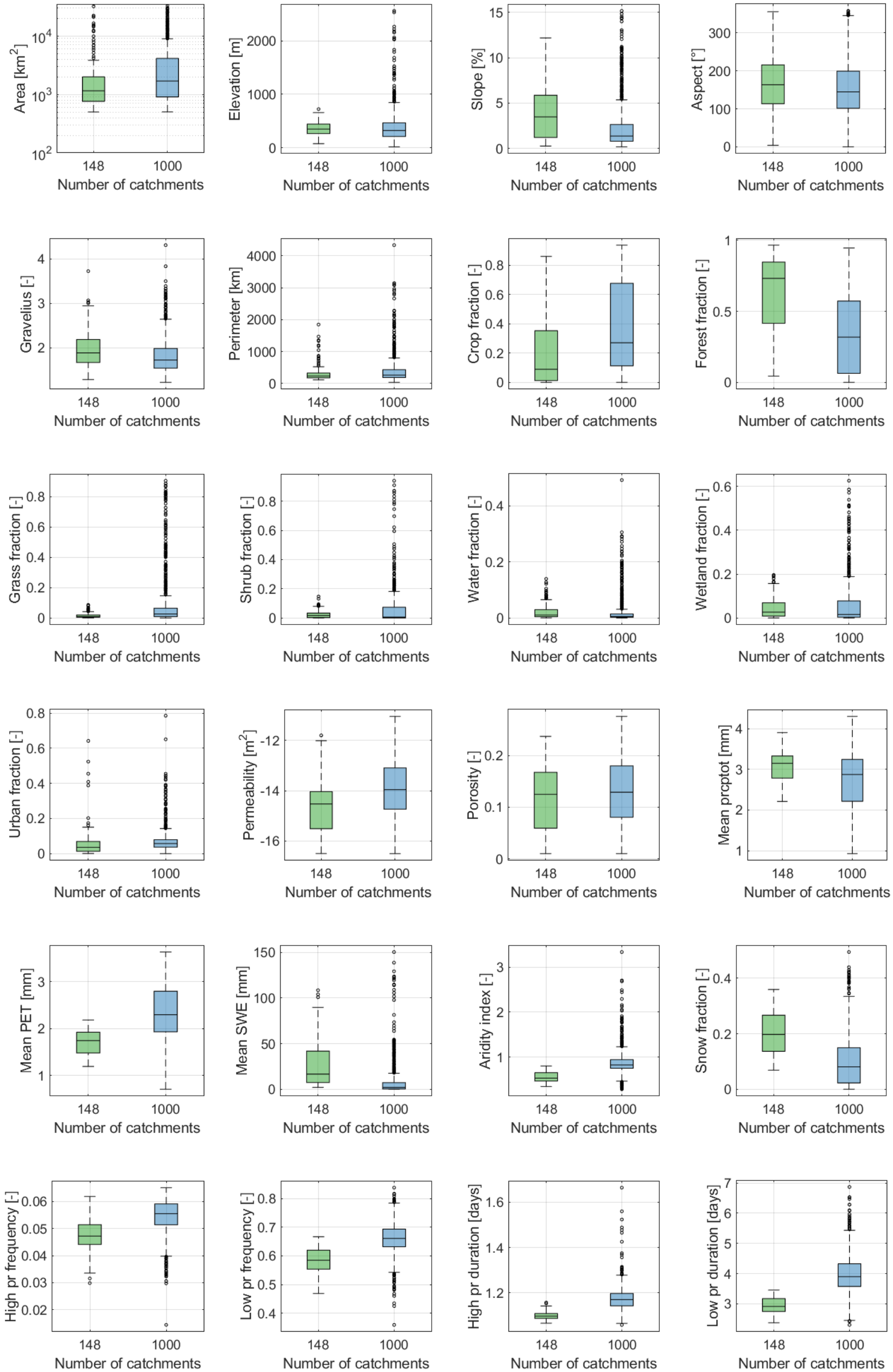

Figure S1: Catchment descriptors for the 148 catchments of this study and for the 1,000 extra donors catchments for the extended LSTM-based model.

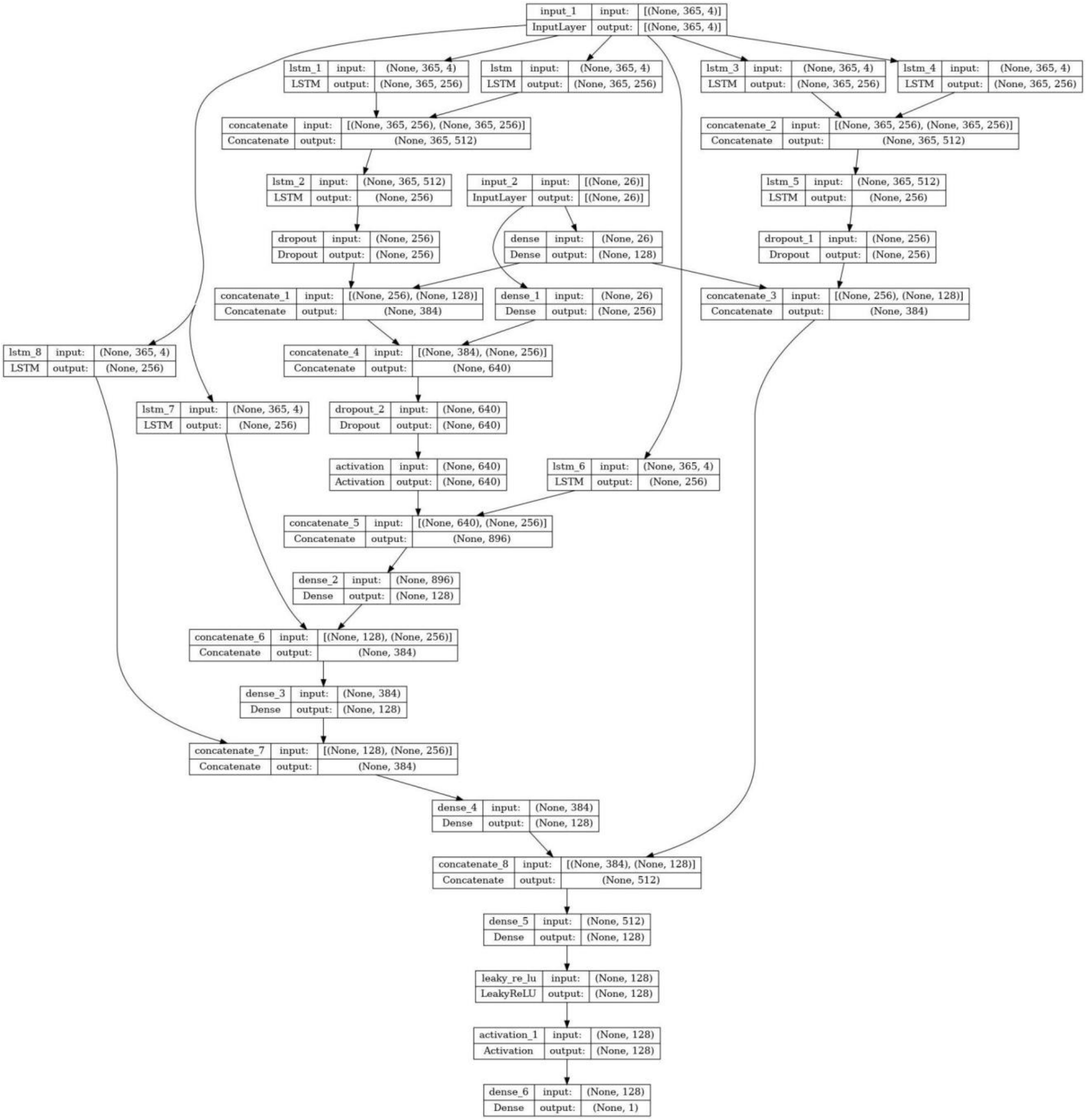

Figure S2: LSTM-based model structure developed and implemented in this study.

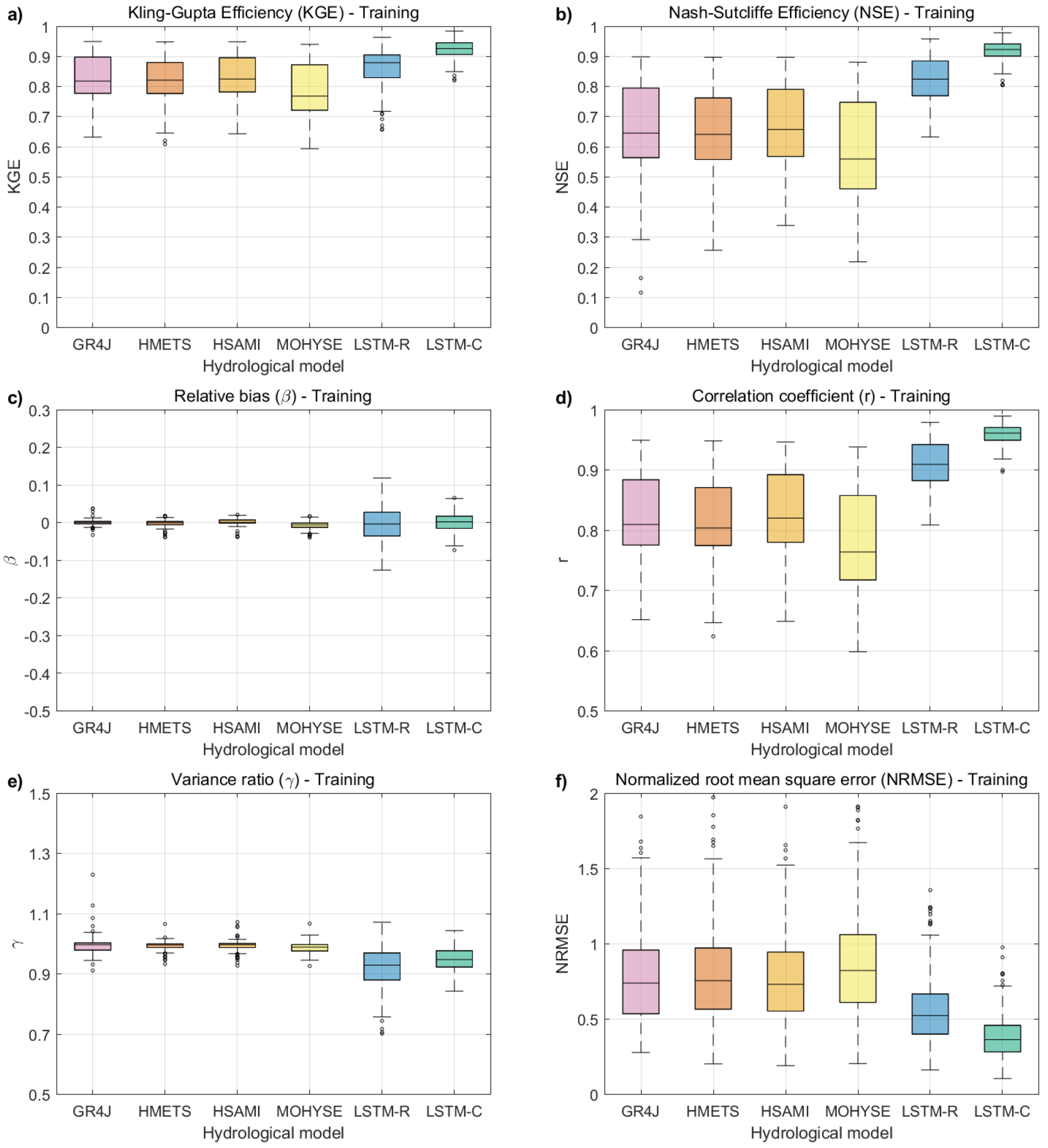

Figure S3: Kling-Gupta Efficiency (KGE; a), Nash-Sutcliffe Efficiency (NSE; b), relative bias (*β*; c), correlation coefficient (*r*; d), variance ratio (*γ*; e), and normalized root mean square error (NRSME; f) metrics over the independent 5-year training period (1983-2002).

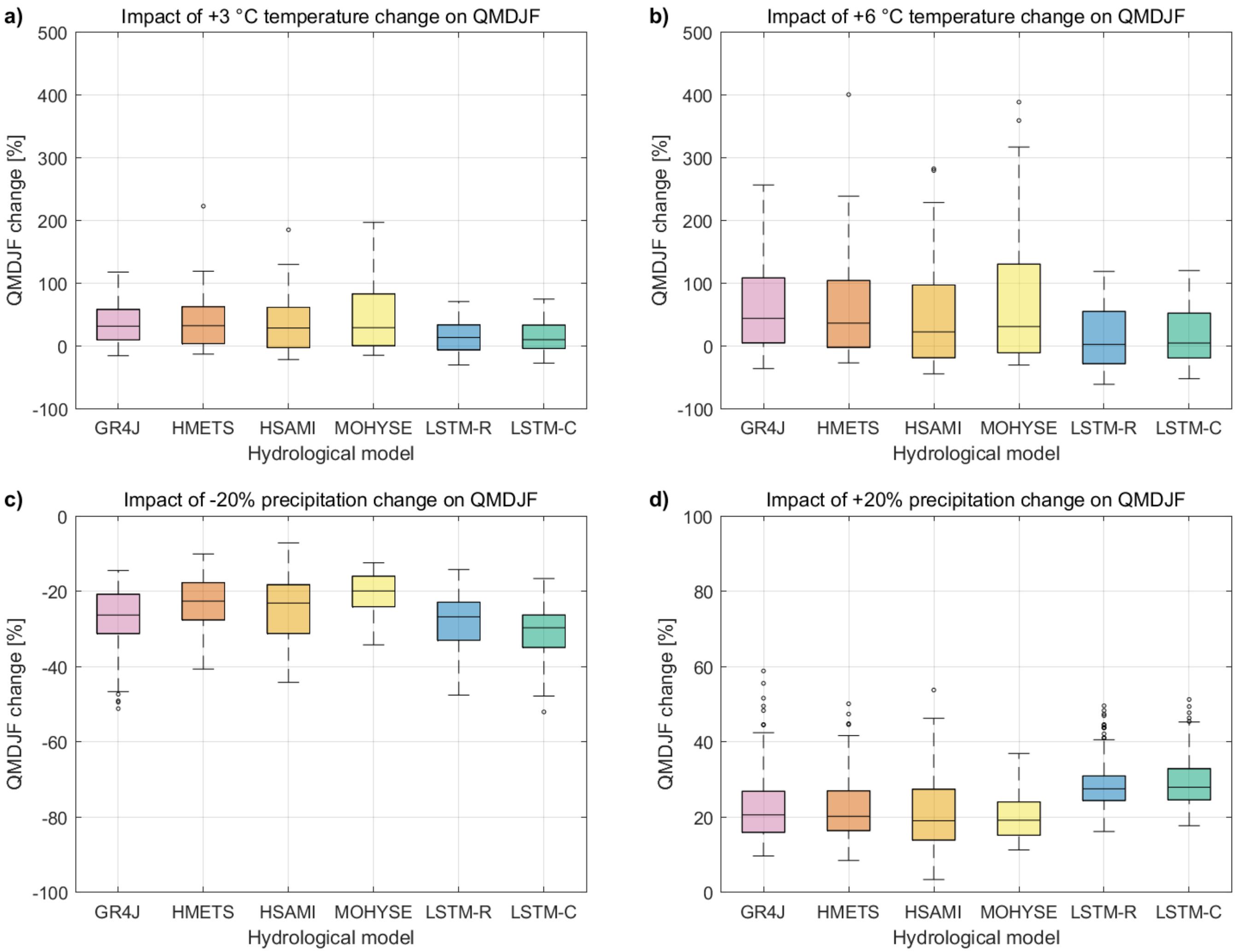

Figure S4: Projected mean winter streamflow (QMDJF) changes for the 4 sensitivity scenarios: temperature increase of +3 °C (a) and +6 °C (b) and precipitation relative change of -20% (c) and +20% (d).

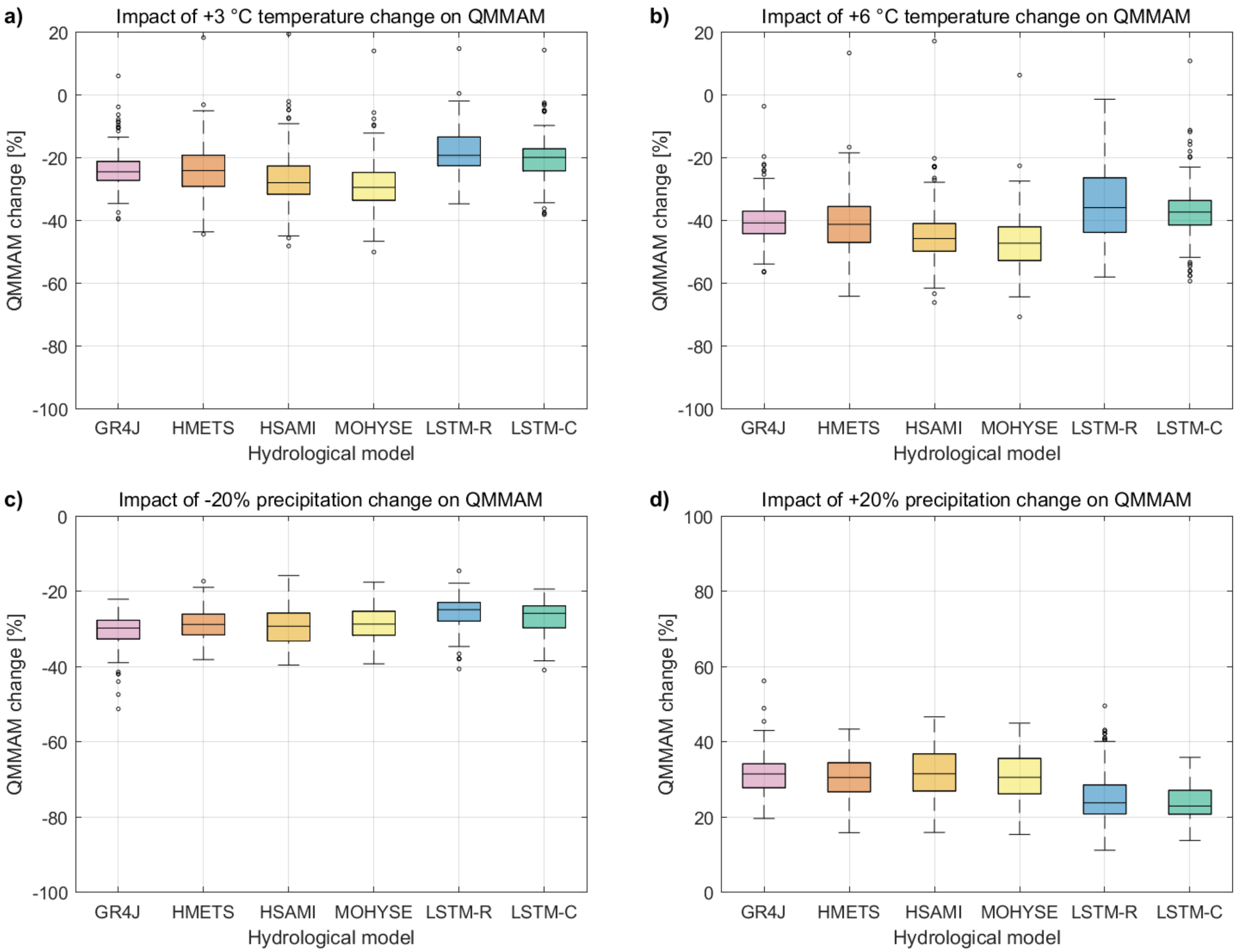

Figure S5: Same as Figure S4, but for mean spring streamflow (QMMAM).

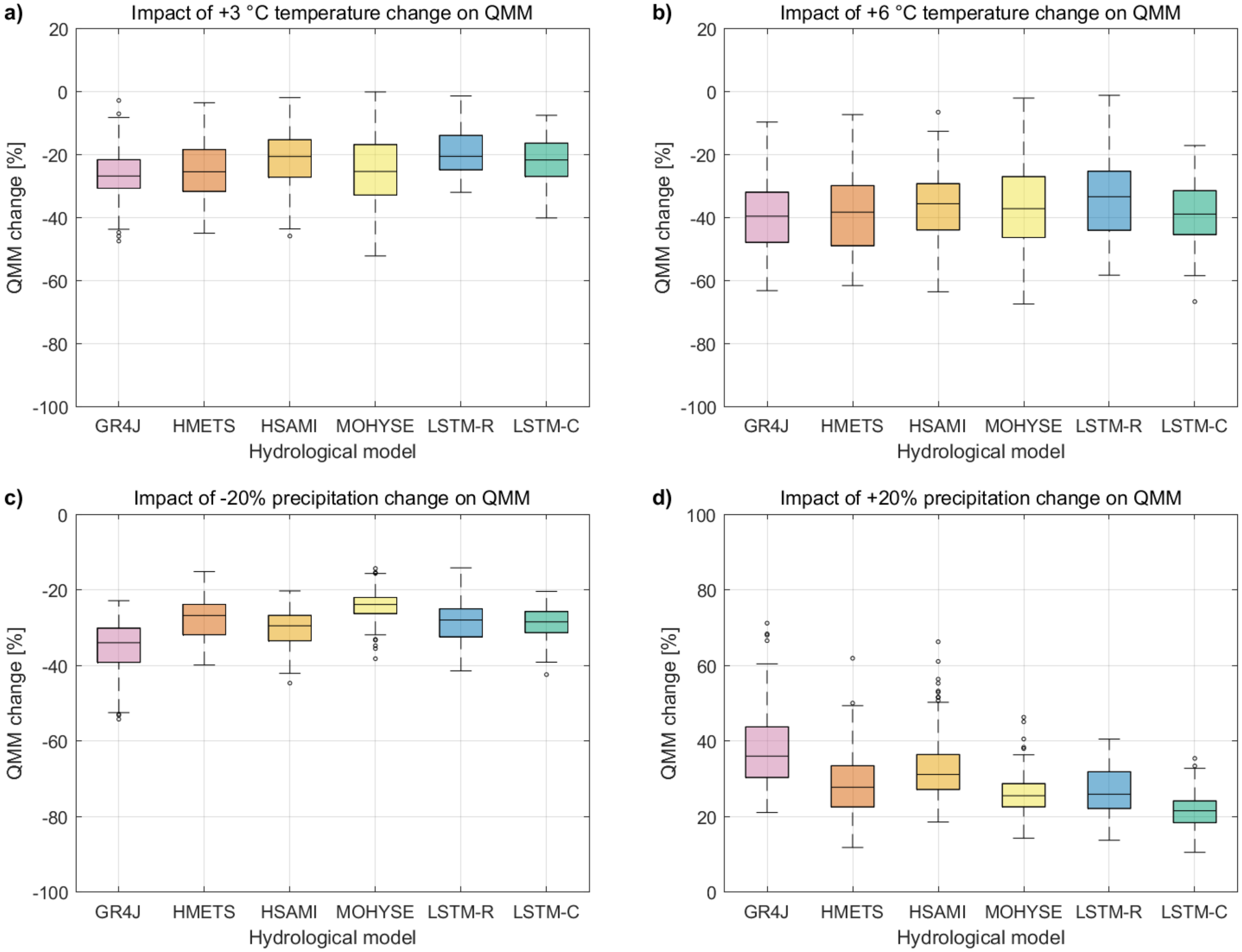

Figure S6: Same as Figure S4, but for mean annual maximum streamflow (QMM).

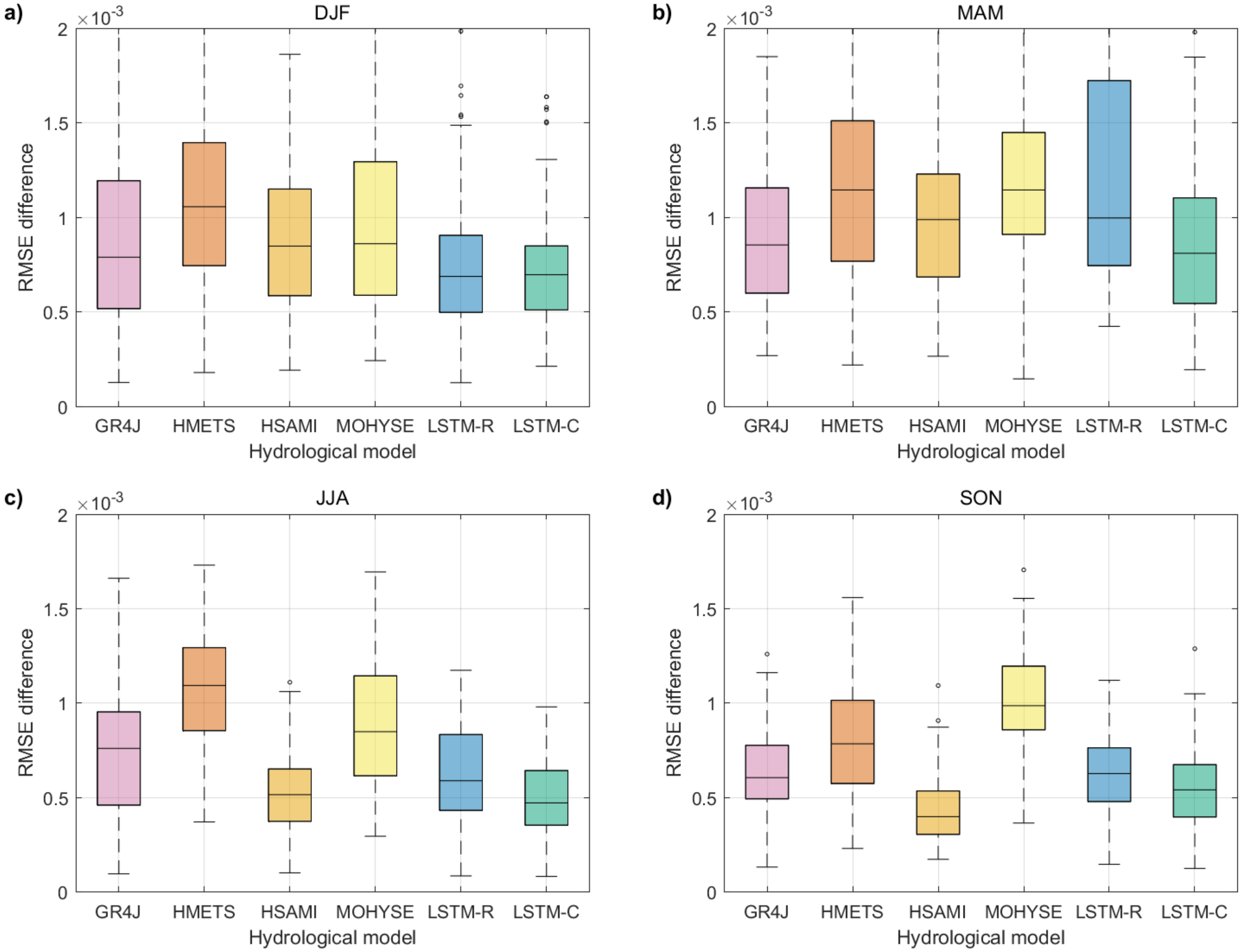

Figure S7: Same as Figure 11, but on a seasonal basis.

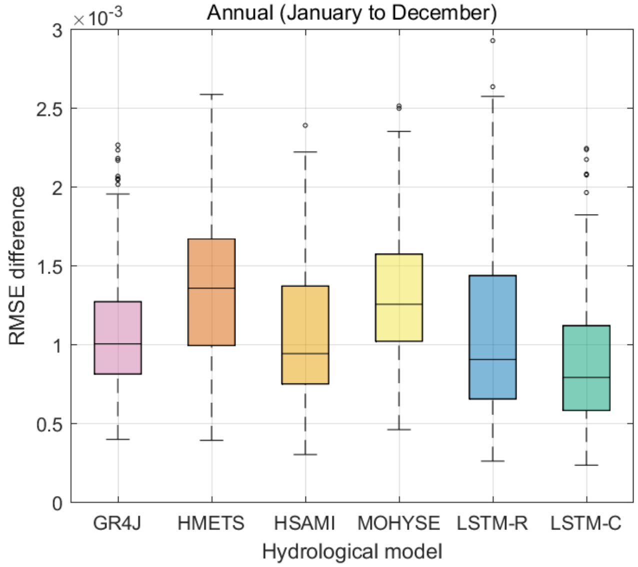

Figure S8: Same as Figure 11, but the 20% increase in precipitation scenario.

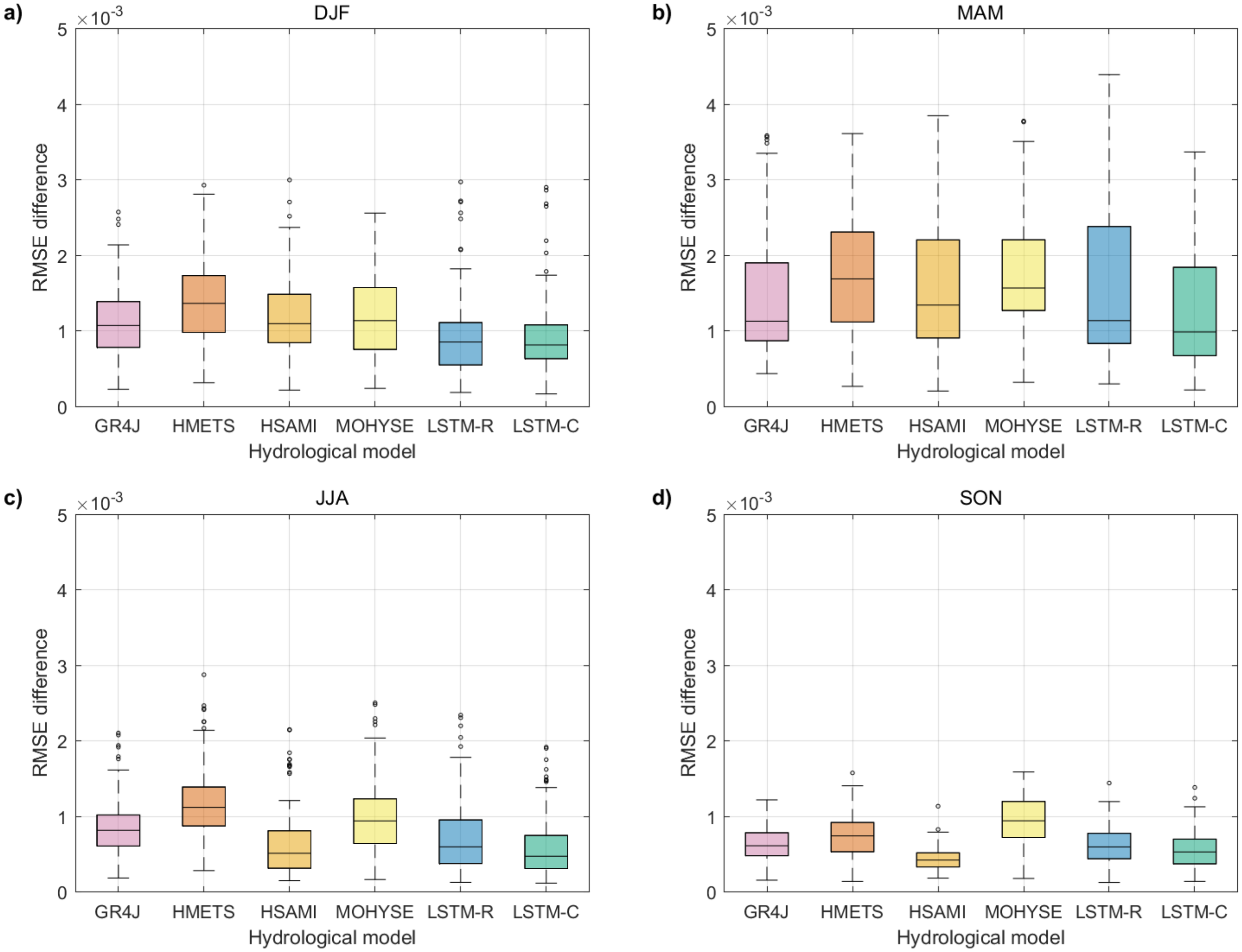

Figure S9: Same as Figure S8, but on a seasonal basis.

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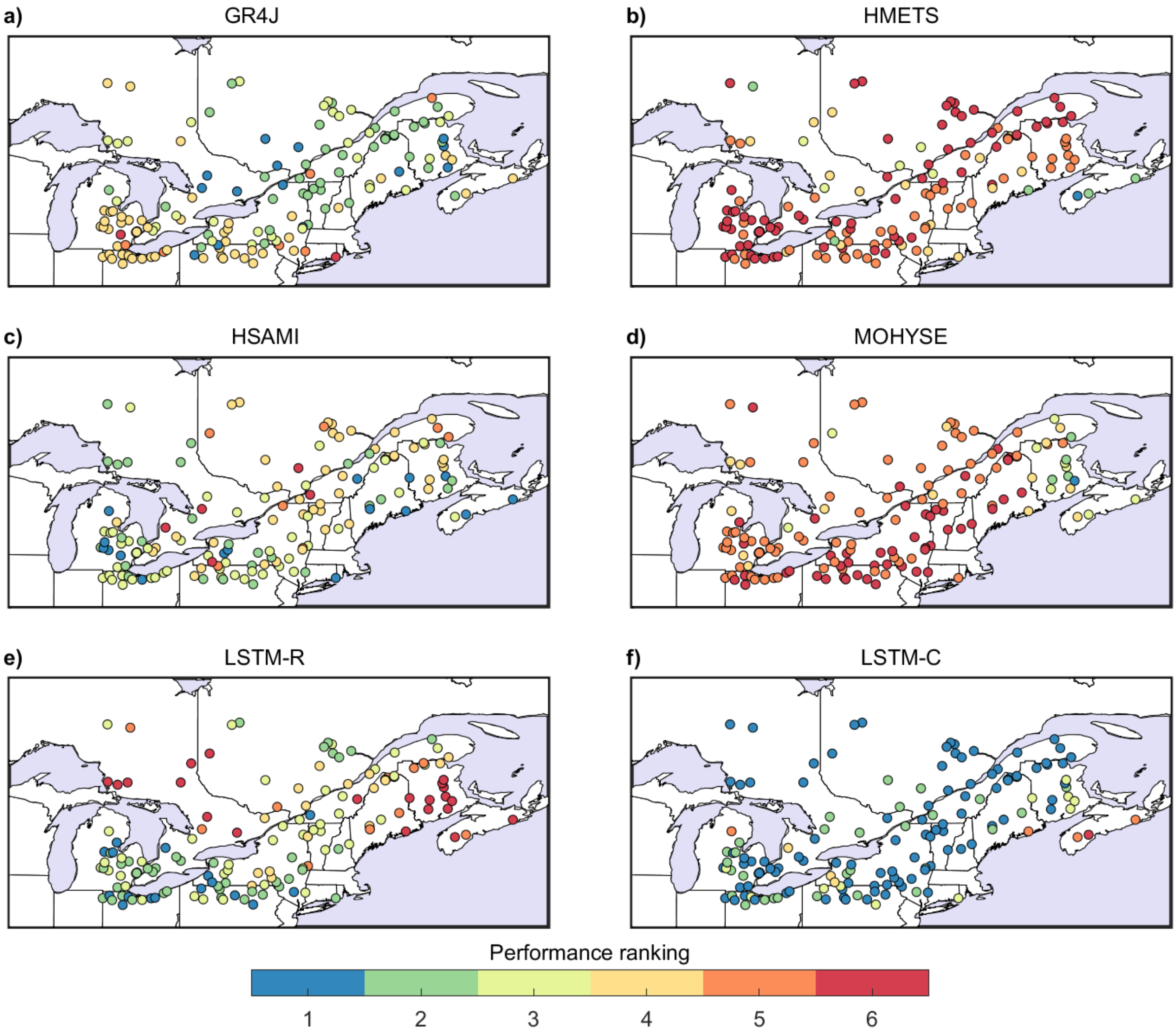

Figure S10: Same as Figure 11, but the 20% increase in precipitation scenario.