1   **Supplement to**
2
3   Ice sheet model simulations reveal polythermal ice conditions existed across the NE USA during
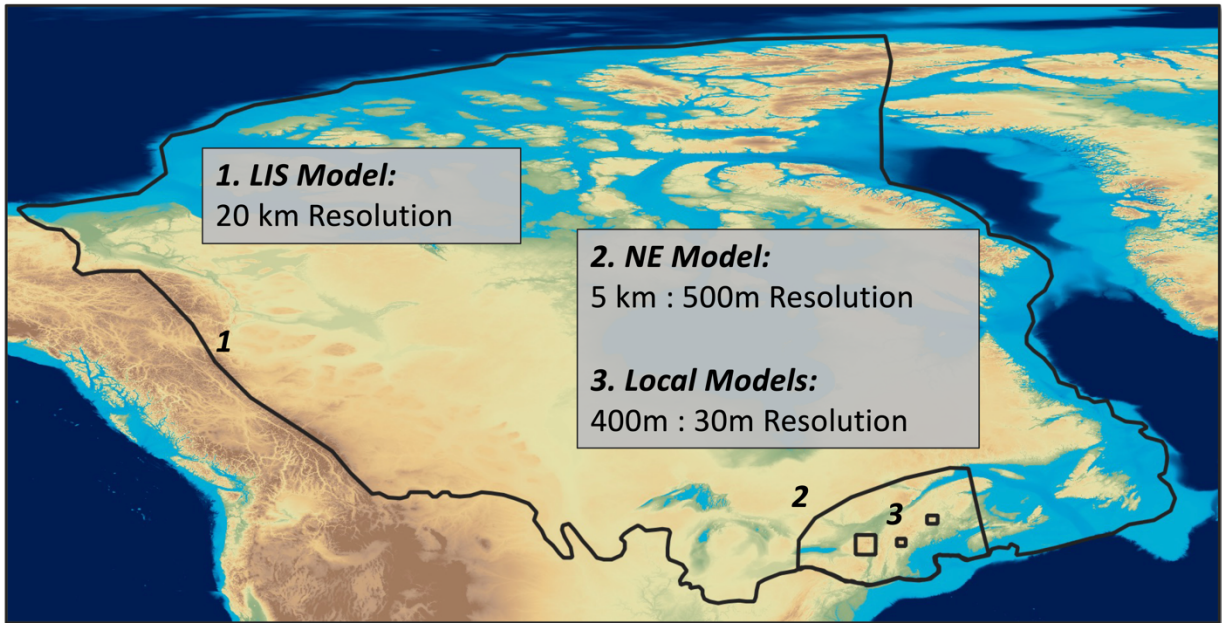4   the Last Glacial Maximum
5
6
7
8
9
10

Figure S1. Model domains used in this study for the LIS model (1), NE model (2), and local models (3). The extent of the model domain follows the reconstructed LGM ice extent from Dalton et al. (2022), but excludes the Cordilleran Ice Sheet and the connection between Ellesmere Island and the Greenland Ice Sheet.
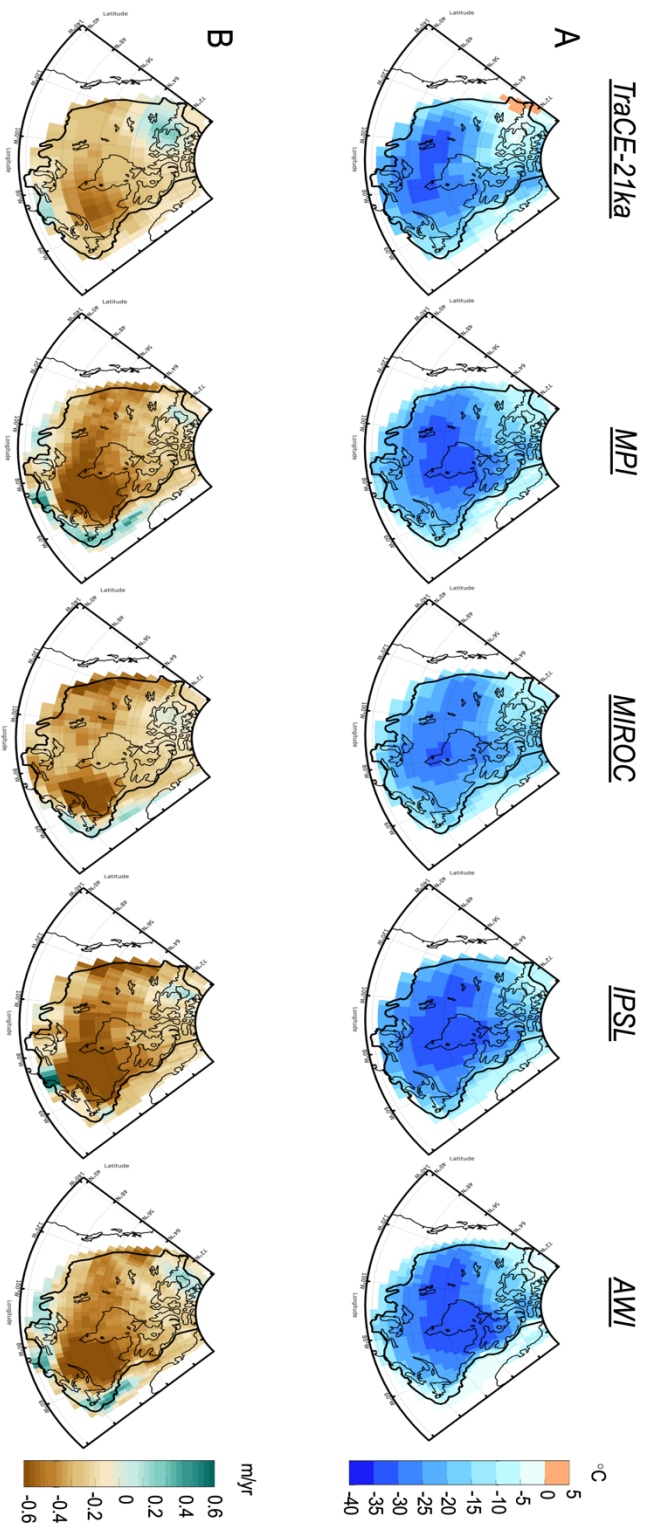
11
12
13
14
15
16
17
18
19
20
21
22
23

Figure S2. A. Annual surface temperature anomalies shown as the difference between the LGM and Preindustrial period for each climate model output (LGM-PI; °C), and B. Annual accumulation anomaly shown as the difference between the LGM and Preindustrial period for each climate model output (LGM-PI; m/yr).
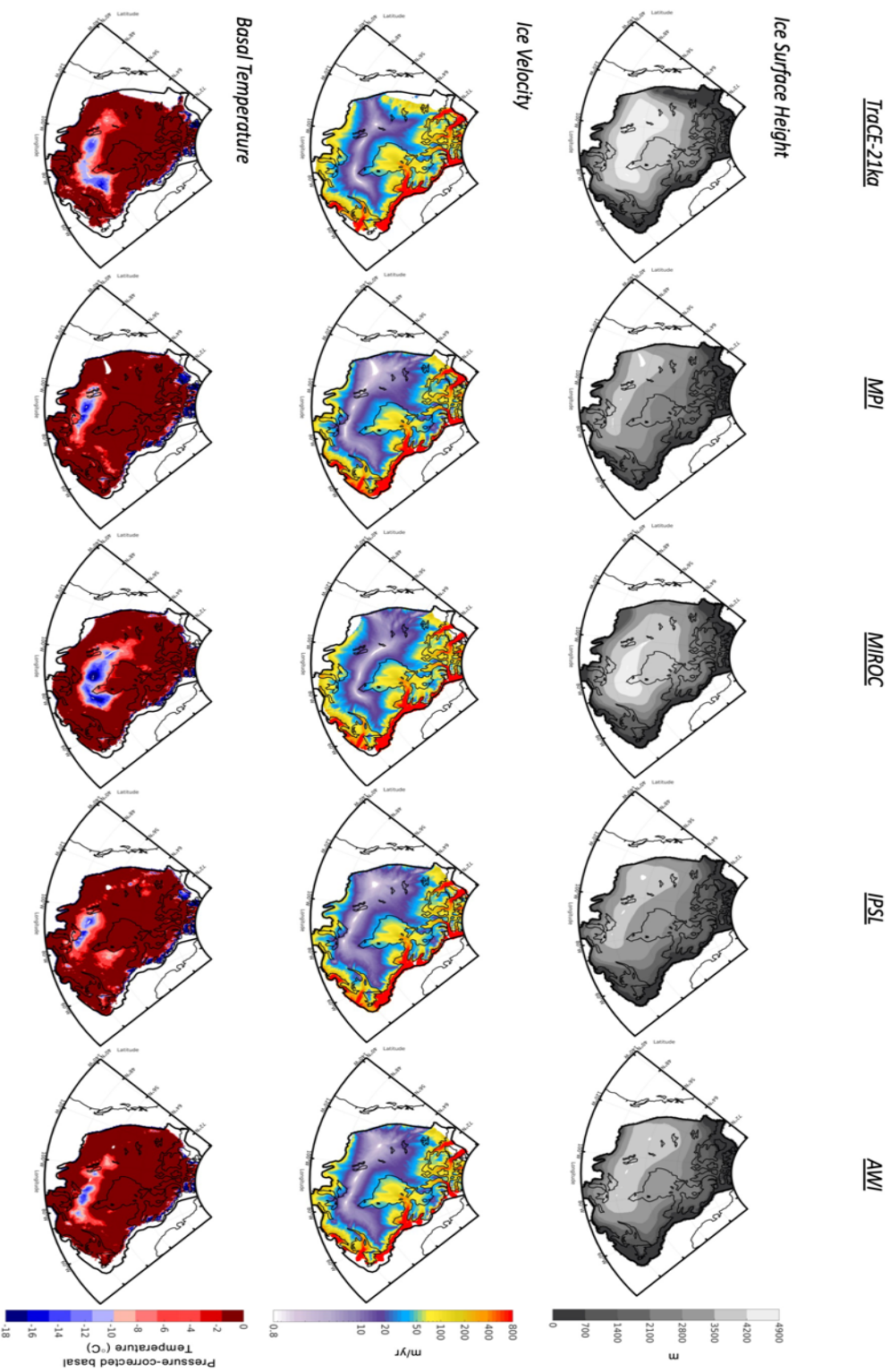
Figure S3. The simulated steady-state LGM conditions for the LIS model and the corresponding LGM surface climate forcing used (see Table 1). Shown are the simulated LGM surface height (m), the simulated LGM depth average ice velocity (m/yr), and the simulated LGM pressure corrected basal temperature.
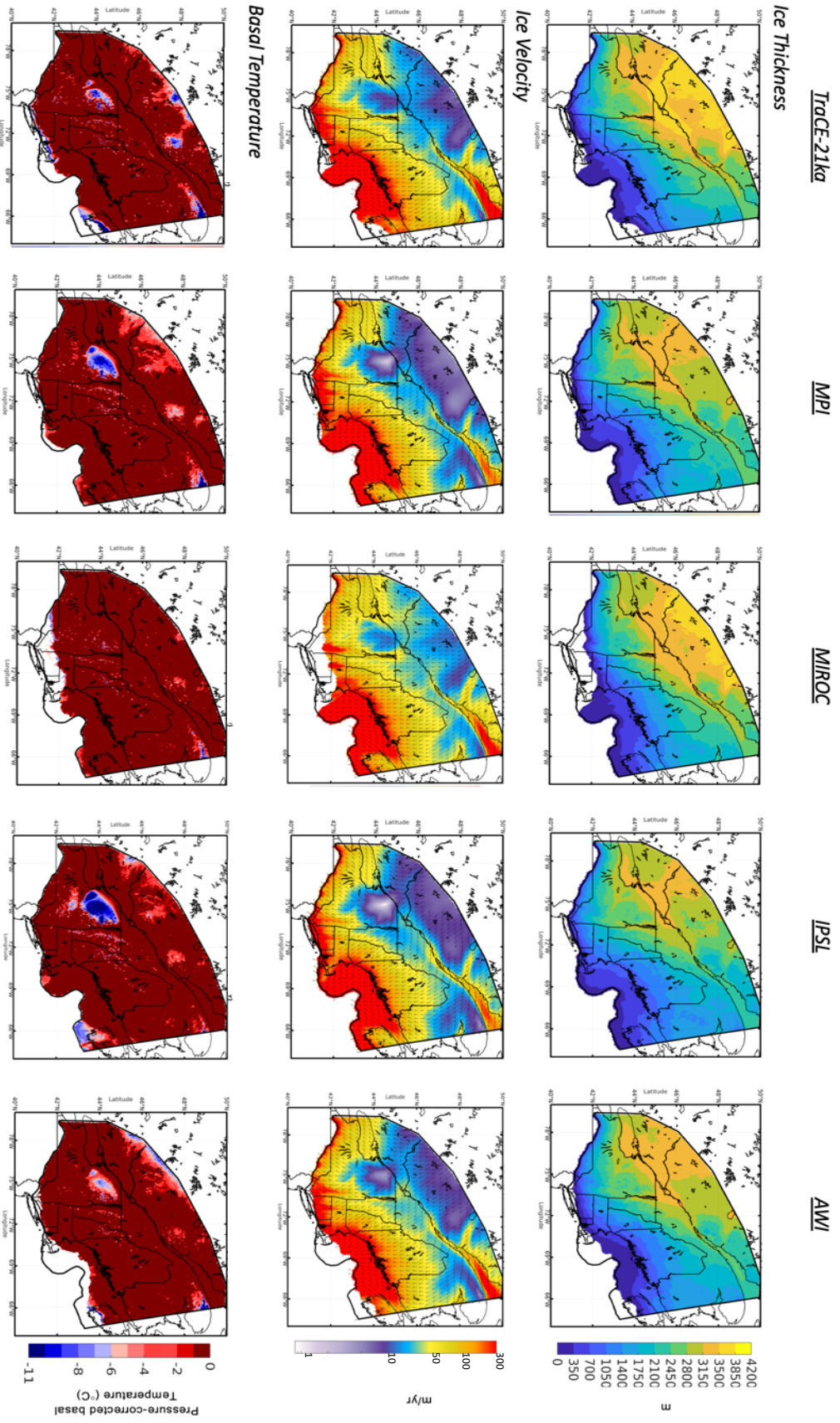
Figure S4. The simulated steady-state LGM conditions for the NE USA model and the corresponding LGM surface climate forcing used (see Table 1). Shown are the simulated LGM surface height (m), the simulated LGM depth average ice velocity (m/yr), and the simulated LGM pressure corrected basal temperature.
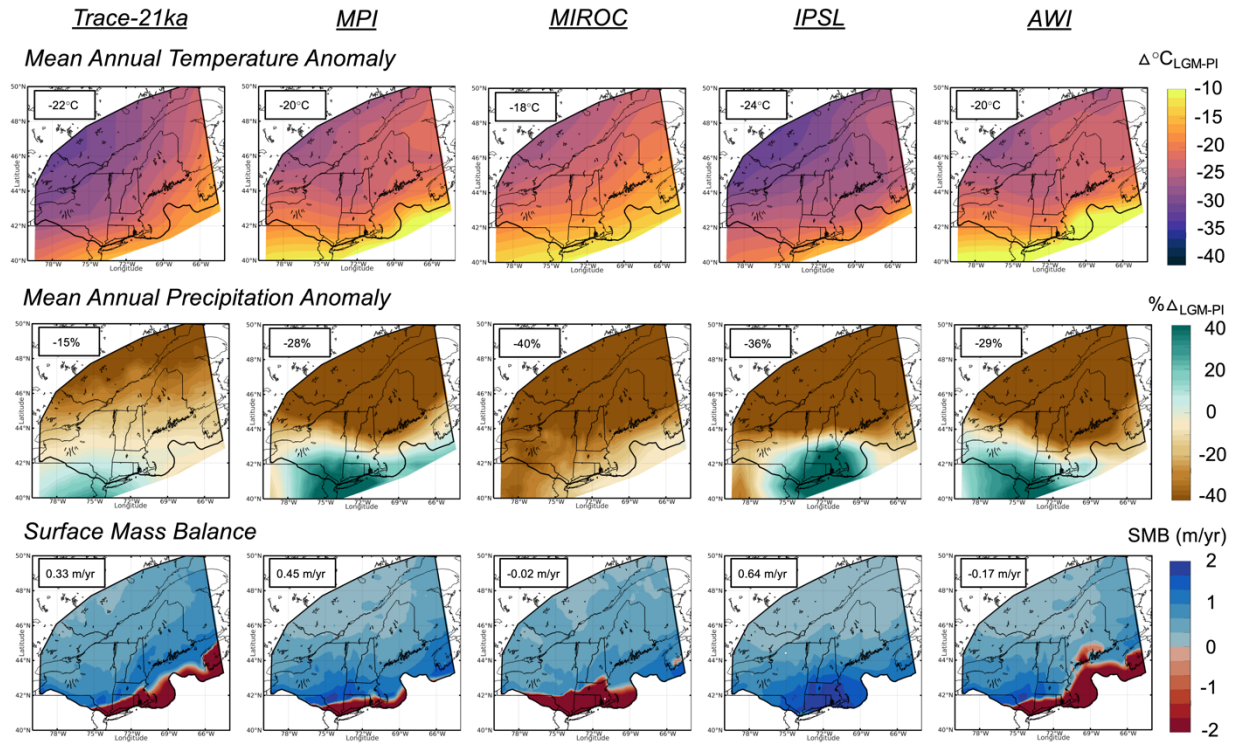
Figure S5. Top Row: Mean annual temperature anomaly across the NE USA domain for each climate model. Anomaly is expressed as the difference between the LGM and preindustrial. Middle Row: Mean annual precipitation anomaly across the NE USA domain for each climate model. Anomaly is expressed as the difference between the LGM and preindustrial. Bottom Row: Simulated LGM Surface Mass balance. For each panel, the number in the upper left corner represents the area-averaged mean across the model domain.