Table 3. Overview on data used and their availability for the estimate of heat available to melt the cryosphere over the period 1979–2020. Backward extension to 1971 for the heat inventory is based on the assumption of negligible contribution. General specifications include constant values for latent heat of fusion of $3.34 \times 10^5\,\mathrm{J\,kg^{-1}}$, specific heat capacity of $2.01 \times 10^3\,\mathrm{J\,kg^{-1}\,°C^{-1}}$ TS22, density of ice of $917\,\mathrm{kg\,m^{-3}}$ for first-year ice and $882\,\mathrm{kg\,m^{-3}}$ for multiyear ice; see also Ciais et al. (2014), Slater et al. (2021), and von Schuckmann et al. (2020). Other component specifications are provided in the table.

Components	Data type and information	Periods covered	Other specifications:
Antarctic Ice Sheet	Grounded ice change from IMBIE (Shepherd et al., 2018, 2019)	1992–2020;	Mean ice temperature for floating ice (basal melting): −2 °C ±10 °C; floating ice (calving): −16 °C ±10 °C (Clough and Hansen, 1979); grounded ice: −20 ± 10 °C
	Grounded ice change before 1992 combining satellite and regional climate model data after Rignot et al. (2019)	1972–1991	
	Floating ice change from satellite altimetry reconstructions (Adusumilli et al., 2020)	1994–2020 (extrapolated between 2017–2020); 1979–1993: zero mass loss assumed	
	Ice front retreat due to calving in the Amundsen Sea using ERS-1 radar altimetry (Adusumilli et al., 2020)	1994–2020 (linear rate of energy uptake assumed)	
	Antarctic Peninsula ice front retreat due to calving from imagery and remotely sensed data (Cook and Vaughan, 2010; Adusumilli et al., 2020)	1979–2020 (linear rate of energy uptake assumed)	
Antarctic sea ice	Sea ice thickness from GIOMAS (Zhang and Rothrock, 2003)	1979–2020	Mean ice temperature: 0 °C ±10 °C
Arctic sea ice	Sea ice thickness from PIOMAS model data (Schweiger et al., 2019; Zhang and Rothrock, 2003)	1979–2011	Mean ice temperature: 0 °C ±10 °C
	CryoSat-2 satellite radar altimeter measurements (Slater et al., 2021; Tilling et al., 2018)	2011–2020	
Glaciers (distinct from ice sheets)	Geodetic and in situ glaciological observations after Zemp et al. (2019)	1979–1996	Mean ice temperature: 0 °C ±10 °C
	In situ glaciological observations after Zemp et al. (2020) and WGMS (2021)	1997–2020	
Greenland Ice Sheet	Grounded ice change from IMBIE (Shepherd et al., 2018, 2019)	1992–2020;	Mean ice temperature for floating ice: −15 °C ±10 °C grounded ice: −20 ± 10 °C
	Grounded ice change before 1992 from satellite velocity (Mankoff et al., 2019) and regional climate models (Mouginot et al., 2019)	1979–1991	
	Floating ice change (ice shelf collapse/thinning and tidewater glacier retreat) after Moon and Joughin (2008); Motyka et al. (2011); Mouginot et al. (2015); Münchow et al. (2014); Wilson et al. (2017); Carr et al. (2017)	1979–1996: no loss assumed TS23	