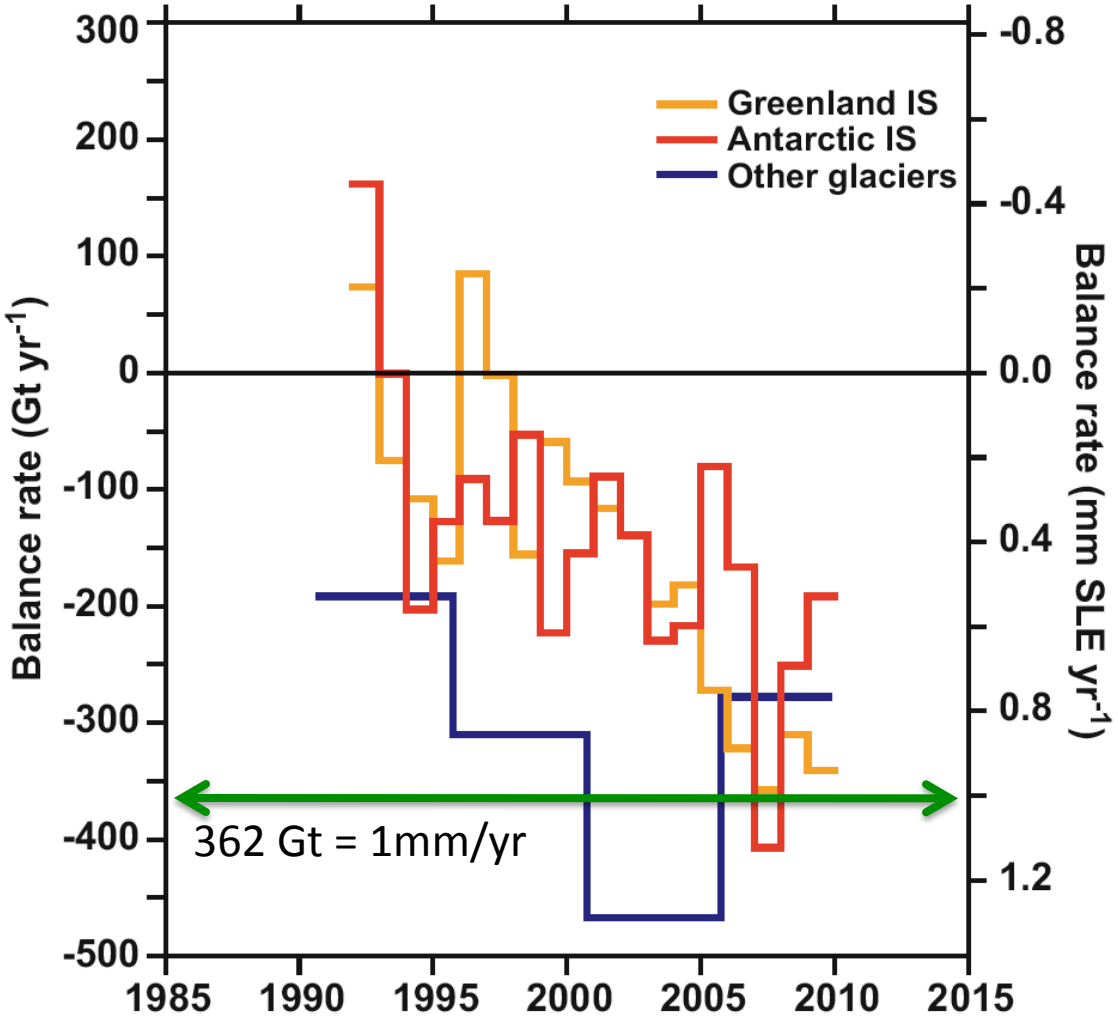

Iceland’s Skaftafellsjökull Terminus


Iceland’s Vatnajokull outlet glacier terminus viewed from late 19th century Little Ice Age Moraine

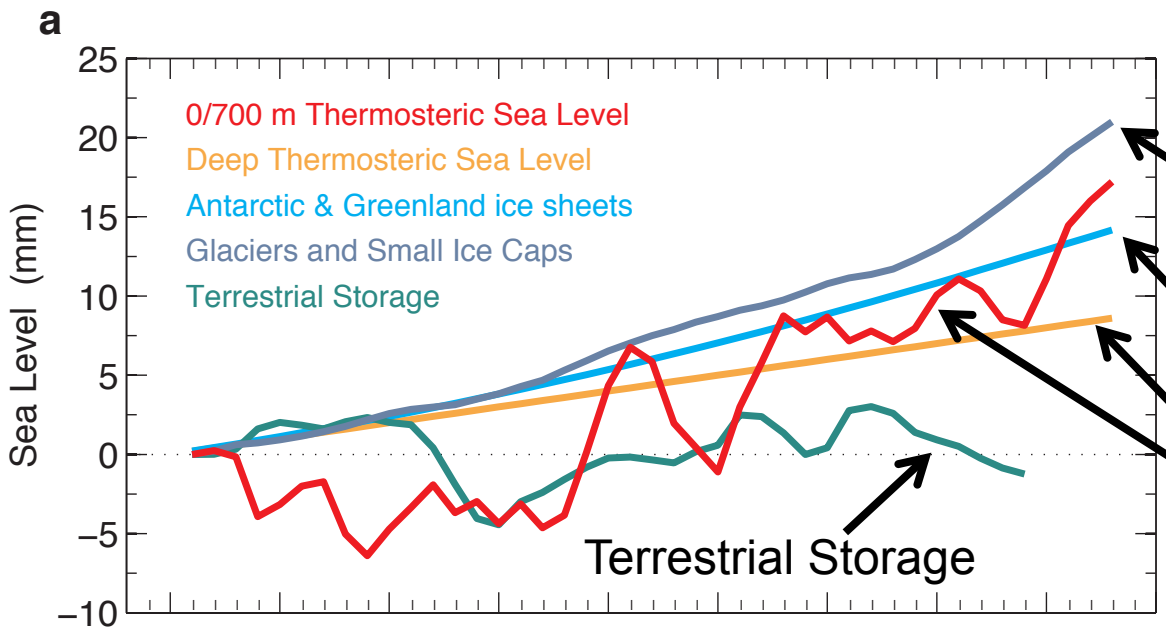
Most recent global result for global glaciers (as of October 2011)*



* Very dependent on global glacier inventory – currently being updated and completed.

from Cogley "The Future of the World's Glaciers" (in press)

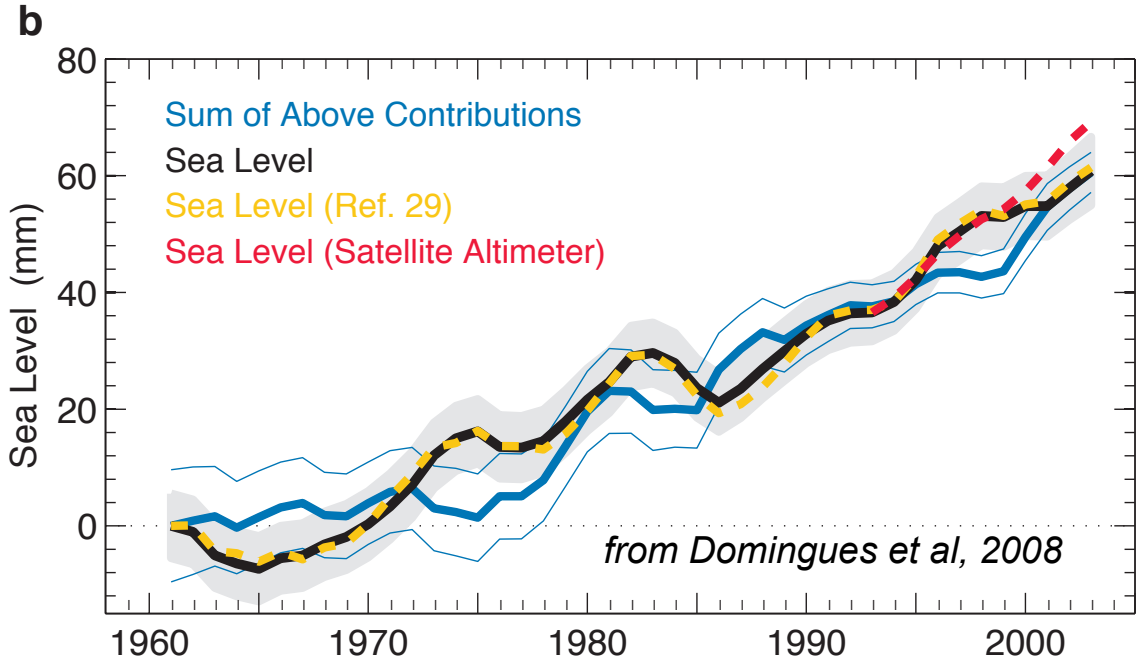
Present-day observations



Glaciers

Greenland and Antarctic Ice Sheets

Thermal expansion



Summation of components of SLR compared to direct observation of SLR as of 2008

Present Budget from Cazenave and Llovel 2010

Table 1 Sea level budget for two time spans (1993–2007, 2003–2007)*

Sea level rise (mm year^{-1})	1993–2007	2003–2007
Observed	3.3 ± 0.4	2.5 ± 0.4 (Ablain et al. 2009)
Thermal expansion	1.0 ± 0.3 (mean of Levitus et al. 2009 and Ishii & Kimoto 2009 values)	0.25 ± 0.8 (Argo) (mean of Willis et al. 2008, Cazenave et al. 2009, and Leuliette & Miller 2009 values)
Ocean mass	2.3 ± 0.5 (observed rate minus thermal expansion)	2.1 ± 0.1 (GRACE with a −2 mm year^{-1} GIA correction, Cazenave et al. 2009)
Glaciers	1.1 ± 0.25 (based on Kaser et al. 2006 and Meier et al. 2007)	1.4 ± 0.25 (Cogley 2009)
Total ice sheets (Greenland & Antarctic)	0.7 ± 0.2 0.4 ± 0.15 0.3 ± 0.15 (compilation of published results)	1.0 ± 0.2 0.5 ± 0.15 0.5 ± 0.15 (compilation of published results)
Land waters	—	−0.2 ± 0.1 (W. Llovel, K. DoMinh, A. Cazenave, J.F. Cretaux, M. Becker, unpublished manuscript)
Sum of (2 + 4 + 5 + 6)	2.85 ± 0.35	2.45 ± 0.85
Observed rate minus sum	0.45	−0.05

*Quoted errors are one standard deviation. The observed sea level rate is GIA corrected (−0.3 mm year^{-1} removed).

SL budget closes to +0.46 mm yr^{-1} (16%) for 1993-2007

SL budget closes to -0.05 mm yr^{-1} (2%) for 2003-2007

Summation of components of SLR compared to direct observation of SLR as of 2010