

The conclusion of the IPCC chapter on sea level notes wide uncertainties over the next century, and that its not possible to give an upper range because of possible ice sheet collapse.

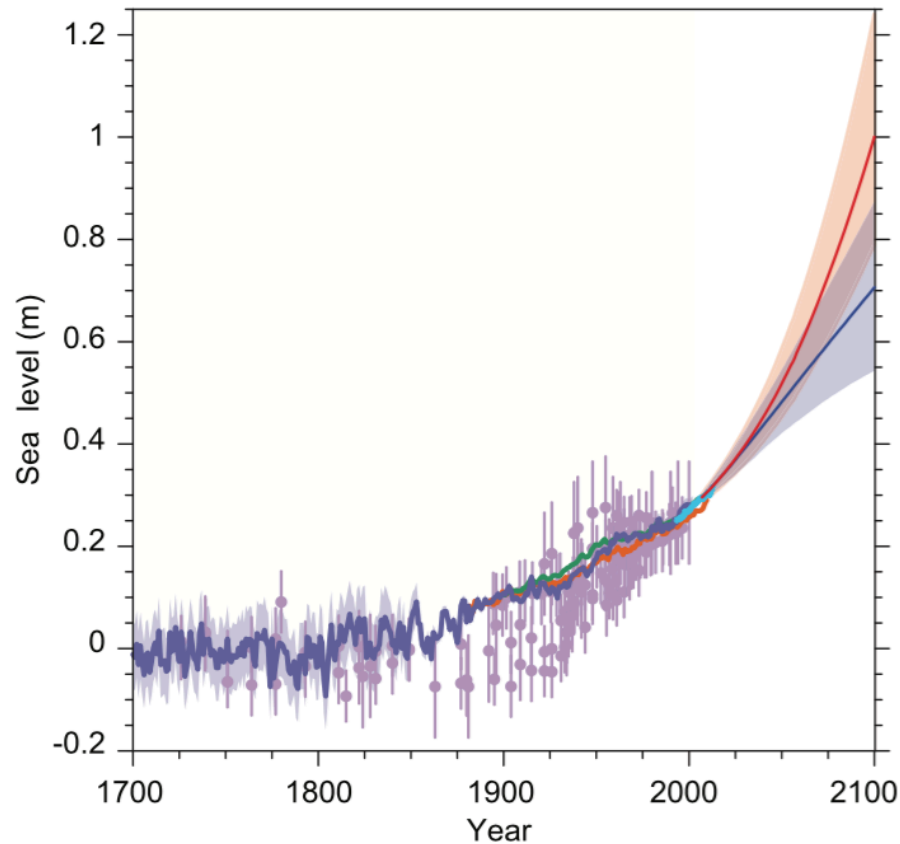
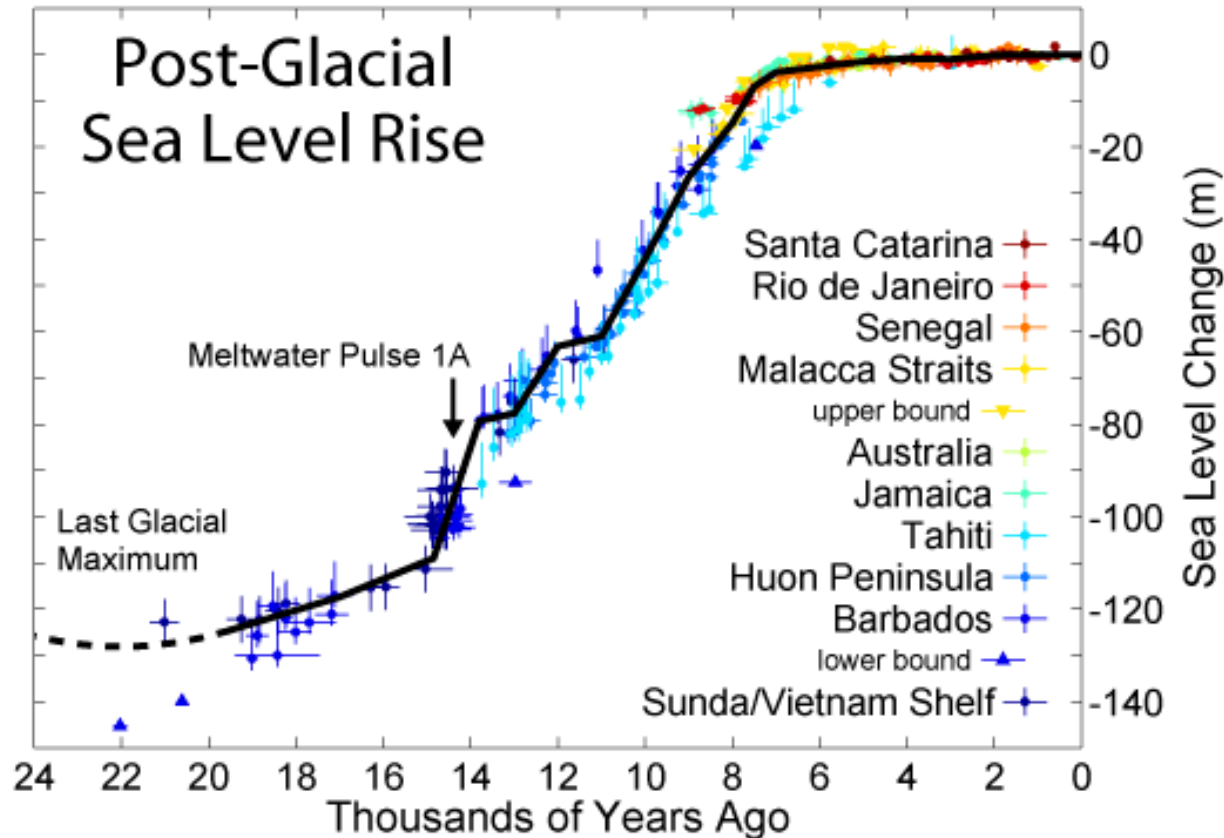


Figure 13.27 | Compilation of paleo sea level data, tide gauge data, altimeter data (from Figure 13.3), and central estimates and *likely* ranges for projections of global mean sea level rise for RCP2.6 (blue) and RCP8.5 (red) scenarios (Section 13.5.1), all relative to pre-industrial values.

Despite this progress, significant uncertainties remain, particularly related to the magnitude and rate of the ice-sheet contribution for the 21st century and beyond, the regional distribution of sea level rise, and the regional changes in storm frequency and intensity. For coastal planning, sea level rise needs to be considered in a risk management framework, requiring knowledge of the frequency of sea level variability (from climate variability and extreme events) in future climates, projected changes in mean sea level, and the uncertainty of the sea level projections (Hunter, 2010, 2012), as well as local issues such as the compaction of sediments in deltaic regions and the changing supply of these sediments to maintain the height of the deltas (Syvitski et al., 2009). Although improved understanding has allowed the projection of a *likely* range of sea level rise during the 21st century, it has not been possible to quantify a *very likely* range or give an upper bound to future rise. The potential collapse of ice shelves, as observed on the Antarctic Peninsula (Rignot et al., 2004; Scambos et al., 2004; Rott et al., 2011), could lead to a larger 21st century rise of up to several tenths of a metre.

During the last deglaciation, between 18,000 and 8,000 years ago, sea level rose at about 10 mm/year, but during meltwater pulse 1A it apparently rose at 40 mm/year. Where did this pulse of meltwater originate from?



(figure from Global Warming Art website)