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Expert assessment of sea-level rise by AD 2100 and AD 2300

Stefan Rahmstorf (1), Benjamin Horton (2), Simon Engelhart (3), and Andrew Kemp (4)

(1) Potsdam Institute for Climate Impact Research, Telegrafenberg A62, 14473 Potsdam, Germany (rahmstorf@ozean-klima.de), (2) Institute of Marine and Coastal Science, Rutgers University, New Brunswick, United States (bphorton@marine.rutgers.edu), (3) Department of Geosciences, University of Rhode Island, Kingston, Rhode Island 02881, USA (engelhart@mail.uri.edu), (4) Department of Earth and Ocean Sciences, Tufts University, Medford, Massachusetts 02155, USA (Andrew.Kemp@tufts.edu)

Large uncertainty surrounds projections of global sea-level rise, resulting from uncertainty about future warming and an incomplete understanding of the complex processes and feedback mechanisms that cause sea-level to rise. Consequently, existing models produce widely differing predictions of sea-level rise even for the same temperature scenario. Here we present results of a broad survey of 90 experts who were amongst the most active scientific publishers on the topic of sea level in recent years. They provided a probabilistic assessment of sea-level rise by AD 2100 and AD 2300 under two contrasting temperature scenarios. For the low scenario, which limits warming to <2°C above pre industrial temperature and has slowly falling temperature after AD 2050, the median 'likely' range provided by the experts is 0.4–0.6m by AD 2100 and 0.6–1.0m by AD 2300, suggesting a good chance to limit future sea-level rise to <1.0m if climate mitigation measures are successfully implemented. In contrast, for the high warming scenario (4.5°C by AD 2100 and 8°C in AD 2300) the median likely ranges are 0.7–1.2m by AD 2100 and 2.0 3.0m by AD 2300, calling into question the future survival of some coastal cities and low-lying island nations.