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# Coastal sea level rise with warming above 2 degree

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Two degrees global warming above the pre-industrial level has been suggested as an appropriate threshold beyond which climate change risks become unacceptably high. This ‘2 degree’ threshold is likely to be reached between 2040 and 2050 for both Representative Concentration Pathway (RCP) 8.5 and 4.5. Resulting sea level rises will not be globally uniform due to ocean dynamical processes and changes in gravity associated with water mass-redistribution. Here we provide probabilistic sea level rise projections for the global coastline with warming above the 2 degree goal. We demonstrate that by 2040 with two degree warming under the RCP8.5 scenario more than 90% of coastal areas will experience sea level rise exceeding the global estimate of 0.2 m, with up to 0.4 m expected along the Atlantic coast of North America and Norway. If warming continues above two degree, then by 2100 sea level will rise with speeds unprecedented throughout human civilization, reaching 0.9 m (median), and 80% of the global coastline will exceed the global ocean sea level rise upper 95% confidence limit of 1.8 m. Coastal communities of rapidly expanding cities in the developing world, small island states, and vulnerable tropical coastal ecosystems will have a very limited time after mid-century to adapt to sea level rises.