



Projecting ice-sheet changes (Agassiz Medal lecture)

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Decades of relative sea-level rise in New Orleans, and of warnings from knowledgeable scientists, were followed by the "sudden" event of flooding of the city in 2005. Policymakers would like to know whether ice-sheet shrinkage in Greenland or Antarctica will contribute to similar- or greater-magnitude relative sea-level rise for the world's coasts, and whether cost-effective actions could avoid such sea-level rise. Recent events in some coastal regions of the ice sheets suggest cause for concern, but confident prediction remains difficult. The contributions of Louis Agassiz in "forensic" and experimental glaciology provide a suitable starting point for consideration of actions required to produce the guidance that policymakers seek. The remarkable improvement in coupled ocean-atmosphere modeling over the last decades, building on extensive observational programs, points toward similar success in ice-sheet science; the investment involved in that success may be instructive.