

Manchester Geological Association
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'Living in a greenhouse world: what the Cretaceous can tell us about global warming'

Professor Cathy Hollis

The Cretaceous (145 to 65 Ma) was one of the most important Period's in Earth history. Plate tectonics meant that by the end of the Cretaceous the Earth's continents had a configuration that resembled the present day. Furthermore, the mass extinction event that took place at the Cretaceous – Tertiary boundary has fascinated scientists – and the public – for decades. It was also the warmest period of the Phanerozoic, with the rock record providing a phenomenal archive of environmental change that can be unravelled through sedimentological, geochemical and palaeontological analysis. This lecture will examine some of these changes, which are recorded in carbonate outcrops across the World. In particular, it will consider what the rock record tells us about ocean temperature and chemistry, and the effect of ocean acidification on faunal diversity. Although concentrations of greenhouse gases in the Earth's atmosphere were much higher in the Cretaceous than they are today, sedimentary archives hold a cautionary tale as to the effects of global warming, and allow us to use the past to consider what may occur in the future.