

Fossil record supports evidence of impending mass extinction

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Global temperatures predicted for the coming centuries may trigger a new ‘mass extinction event’, where over 50 per cent of animal and plant species would be wiped out, warn scientists at the Universities of York and Leeds.

The research team has, for the first time, discovered a close association between Earth climate and extinctions in a study that has examined the relationship over the past 520 million years – almost the entire fossil record available.

Matching data sets of marine and terrestrial diversity against temperature estimates, evidence shows that global biodiversity is relatively low during warm ‘greenhouse’ phases and extinctions relatively high, while the reverse is true in cooler ‘icehouse’ phases.

Moreover, future predicted temperatures are within the range of the warmest greenhouse phases that are associated with mass extinction events identified in the fossil record.

The research, published in the latest issue of *Proceedings of the Royal Society B*, was carried out by University of York student Gareth Jenkins, together with his supervisor, Dr Peter Mayhew, and University of Leeds Professor Tim Benton, both of whom are population ecologists.

Dr Mayhew says: “Our results provide the first clear evidence that global climate may explain substantial variation in the fossil record in a simple

and consistent manner. If our results hold for current warming - the magnitude of which is comparable with the long-term fluctuations in Earth climate - they suggest that extinctions will increase.”

Of the five mass extinction events, four - including the one that eliminated the dinosaurs 65 million years ago - are associated with greenhouse phases. The largest mass extinction event of all, the end-Permian, occurred during one of the warmest ever climatic phases and saw the estimated extinction of 95 per cent of animal and plant species.

“The long-term association has not been seen before, as previous studies have largely been confined to relatively short geological periods, limited geographical extents and few groups of organisms,” says Professor Benton. “But the evidence is striking.”

Source: University of York

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