

Interactive comment on “Mass extinctions past and present: a unifying hypothesis” by S. A. Wooldridge

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TURNOVER OF MAMMALS @ THE KT BOUNDARY:

If the impression was given within the manuscript (*viz.* Wooldridge 2008) that mammals crossed the KT boundary unscathed, then this is incorrect (though unintended). North American mammals most certainly experienced a major turnover at the KT boundary (Alroy 2003). The key point that is highlighted within the manuscript is that the Amniotes (including mammals) displayed differential survival across the KT boundary (Benton and King 1989).

I don't believe that the mammal extinction record can be used as a basis for discrediting the urease hypothesis. As highlighted within the manuscript, a plausible outcome of the urease kill mechanism is a post-apocalyptic greenhouse 'spike' (i.e. rapid climate

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change). Indeed, such a spike is evident at the KT boundary (Retallack 2005). Thus, although mammals are predicted to be unaffected by the direct impact of the urease kill mechanism, they most certainly would not have escaped to ensuing rapid climate change. This is to say nothing of the major disruption to trophic foodwebs.

To conclude, I think is worth noting that although Alroy (2003) attributed the turnover observed in North American mammals at the KT boundary to a bolide impact event, he also provides strong evidence to demonstrate that not one of the subsequent 57 impact craters scattered throughout the Cenozoic can be tied to any important biotic response. If the KT boundary is indeed dominated by an impact (bolide) kill mechanism - as so many people are willing to attest - then why haven't we seen similar devastating impacts since??

REFERENCES

Alroy J. (2003) Cenozoic bolide impacts and biotic change in North American mammals. *Astrobiology* 3, 119-132.

Benton M., King P. (1989) Mass extinctions among tetrapods and the quality of the fossil record (and discussion). *Philos. Trans. R. Soc. London Ser. B*, 325, 369-386.

Retallack G. (2005) An unfortunate series of global atmospheric greenhouse spikes. *Geological Society of America Abstracts with Programs*, 37(5), p. 86.

Wooldridge S. (2008) Mass extinctions past and present: a unifying hypothesis. *Biogeosciences Discussions* 5, 2401-2423.

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