

Expected mass extinction in deep-sea in 22century due to acidification - from evidences in mid-Cretaceous and P/E boundary -

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Larger oceanic alkalinity content can also be argued from the perspective of the production of calcifying organisms at the surface. Recently Zondervan et al. (2001) pointed out that an acidification of the ocean slows or prevents growth of calcifying primary producers. So the fact that we see some carbonate preservation during the Albian suggests that the ocean surface was sufficiently basic, despite higher atmospheric pCO₂, to allow growth of calcifying producers. However, the rapid increase in carbon dioxide in the atmosphere and ocean at P-E boundary resulted in acidification in deep-sea environments. In next century, similar environments in the deep sea will be expected due to the continued rapid increase in the anthropogenic CO₂ in the atmosphere.