



Intrinsic and extrinsic ecological determinants of extinction at the Late Triassic mass extinction

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The Late Triassic extinction (c. 201 Ma) is recognised as one of the “Big Five” mass extinction events, resulting in an estimated loss of over 80% of marine species and ranked third, in terms of ecological severity, amongst Phanerozoic extinctions. Here, we assess how intrinsic and extrinsic ecological factors influence extinction intensity. Using the Bambach ecospace model – based on unique combinations of three variables focusing on mobility, feeding, and tiering – we show that extinction was highest in the tropics, and Panthalassan taxa suffered higher extinction rates than taxa residing in the Tethys Ocean. Reef dwelling taxa suffered the highest levels of extinction, whilst those inhabiting inner-shelf environments were the least affected. An erect benthic or pelagic mode of life appears to have been most susceptible to extinction whilst suspension feeders suffered higher extinction rates than taxa displaying other feeding strategies. Non-motile and highly mobile taxa appear to have suffered higher levels of extinction than slow moving and facultative mobile taxa. The results show that both intrinsic and extrinsic ecological factors have a bearing on whether taxa are more or less likely to survive a mass extinction event.