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Environmental disturbance, resource availability, and biologic turnover at the dawn of animal life

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Manuscript for *Earth-Science Reviews***Environmental disturbance, resource availability, and biologic turnover at the dawn of
animal life**

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ABSTRACT

The radiation of early animals involved dramatic turnover of both eukaryotic life and marine environments, but the factors that drove origination and extinction of taxa remain controversial. Herein, we review current interpretations and uncertainties regarding changes in biodiversity through the Ediacaran Period. Overall, ocean oxygenation and/or ecological restructuring of ecosystems may have driven biologic turnover over time. To explore these possibilities, we provide a conceptual model, rooted in ecological theory, which holistically describes biodiversity change in terms of environmental disturbance frequency/intensity and essential resource availability. In light of this framework, we evaluate two potential drivers of turnover: evolution of mobile animals and the Shuram negative carbon isotope excursion event.

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