



## **Recovery Following the End-Triassic Mass Extinction: Insights from Mercury Anomalies and Their Relationship to the Central Atlantic Magmatic Province**

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The end-Triassic mass extinction overlapped with the eruption of the Central Atlantic Magmatic Province (CAMP), and release of CO<sub>2</sub> and other volatiles has been implicated in the extinction. However, the timing of marine biotic recovery versus CAMP eruptions remains uncertain. Here, we use Hg concentrations, Hg/TOC, and Hg isotopes as indicators of CAMP volcanism in continental shelf sediments, the primary archive of faunal data. In Triassic-Jurassic strata, Muller Canyon, Nevada, Hg and Hg/TOC levels are low prior to the extinction, rise sharply in the extinction interval, peak just prior to the appearance of the first Jurassic ammonite, and remain above background in association with a depauperate (low diversity) earliest Jurassic fauna. The return of Hg to pre-extinction levels is associated with a significant pelagic and benthic faunal recovery. Hg isotopes display no significant mass independent fractionation (MIF) within the extinction and depauperate intervals, consistent with a volcanic origin for the Hg. The Hg and paleontological evidence from the same archive indicate that significant biotic recovery did not begin until CAMP eruptions ceased. Notably, carbonate dominated ecosystems did not recover for ~1 million years following the last eruption of CAMP, longer than the typical duration implied for ocean acidification events implying other factors may have played a role in prolonging the recovery time of major carbonate-producing biota.