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Recovery of foraminifers from end-Permian mass extinction: A case study from a carbonate platform in southern China

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The precise temporal relationship between biotic recovery from the end-Permian mass extinction and environmental change is poorly known because there are few localities where high-resolution paleontological and geochemical data span the entire Early and Middle Triassic recovery interval. Consequently, the role of environmental and biological factors in shaping the pattern and timing of biotic recovery remain poorly constrained. In this study, we document Early and Middle Triassic increases in the diversity and sizes of benthic foraminifers using samples from an exceptionally exposed carbonate platform in south China. We observe gradual increase in local diversity and body size through the Early Triassic, with genus diversity, evenness, and body size distributions reaching stable values early in the Anisian. These patterns correspond well with global size data for foraminifers and with a gradual decrease in the rate of carbon isotope excursions. We interpret the pace of recovery to have been governed largely by the decreasing rate of environmental disturbances through Early Triassic time and speculate that waning of Siberian Traps volcanism and associated pulses of volatile release explains this pattern.