
Science - Planetary Science; Study Findings from University of Texas Austin Provide New Insights into Planetary Science (Impacts of Basin Restriction On Geochemistry and Extinction Patterns: a Case From the Guadalupian Delaware Basin, Usa)

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2020 FEB 21 (NewsRx) -- By a News Reporter-Staff News Editor at Science Letter -- Investigators publish new report on Science - Planetary Science. According to news reporting from Austin, Texas, by NewsRx journalists, research stated, "Geochemical data from carbonates often constrain the nature of environmental change during biotic turnover events. Many ancient carbonates, however, formed in geographically-isolated basins subject to local environmental factors, resulting in varying extinction rates between open ocean and restricted settings."

Financial supporters for this research include Reservoir Characterization Research Lab, a group of industry through the Bureau of Economic Geology, Geological Society of America (GSA), Society for Sedimentary Geology (SEPM).

The news correspondents obtained a quote from the research from the University of Texas Austin, "It follows that high-resolution data from restricted basins may help unravel poorly-understood biotic crises such as the Mid-Capitanian extinction, which had especially high extinction rates in restricted settings. This study examines factors controlling salinity, stratification, and oxygenation in the Capitanian (Middle Permian) Delaware Basin, USA. Elemental and carbon isotope measurements from time-equivalent strata reveal differences between shallow- and deep-water masses, pointing to local controls such as stratification and de-oxygenated bottom water. Basinal dolomites and evaporites mark periods of elevated salinity tied to sea-level lowstands, which correspond with turnovers in fusulinid and brachiopod communities. Faunal turnover in the Delaware Basin demonstrates a fundamental attribute of restricted basins: water chemistry is often tightly coupled to physical process such as sea level change."

According to the news reporters, the research concluded: "We suggest that the relationships among sea level fluctuations, chemical changes, and biotic turnover may explain why the Capitanian mass extinction was more severe in isolated basins than the open ocean."

For more information on this research see: Impacts of Basin Restriction On Geochemistry and Extinction Patterns: a Case From the Guadalupian Delaware Basin, Usa. Earth and Planetary Science Letters, 2020;530():. Earth and Planetary Science Letters can be contacted at: Elsevier, Radarweg 29, 1043 Nx Amsterdam, Netherlands. (Elsevier - www.elsevier.com; Earth and Planetary Science Letters - www.journals.elsevier.com/earth-and-planetary-science-letters/)

Our news journalists report that additional information may be obtained by contacting B.P. Smith, University of Texas Austin, Dept. of Geological Sciences, Jackson School of Geosciences, Austin, TX 78712, United States. Additional authors for this research include R.C. Martindale, C. Kerans and T. Larson.

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