

Leatham, W. Britt (California State University, San Bernardino), John D. Cooper (California State University, Fullerton), Robert L. Ripperdan (University of Puerto Rico, Mayagüez)

**A NORTH AMERICAN PERSPECTIVE ON THE LATEST ORDOVICIAN EXTINCTION EVENT: INTEGRATIVE LITHOSTRATIGRAPHY, CONODONT BIOSTRATIGRAPHY, AND CARBON-ISOTOPE STRATIGRAPHY, SOUTHERN GREAT BASIN, CENTRAL NEVADA, AND ANTICOSTI ISLAND, CANADA**

Comparison of conodont biostratigraphy and ecostratigraphy with carbon-isotope results, in our baseline Nopah Range, CA section of the upper Ely Springs Dolomite (ESD) and lower Laketown Dolomite, suggests some alluring interregional correlations with other comparatively well documented O/S intervals in central Nevada and Anticosti Island, Canada. A significant negative C-13 excursion ends at a karstified surface approximately 190 meters above the base of the ESD, and just below the first major influx of cold-water conodonts, including *Gamachignathus ensifer*, the principal conodont of the "Fauna 13" Acme Zone. Approximately 40 meters higher in the section, a significant positive C-13 excursion ends at a sharp contact that separates conodonts of Silurian aspect from truly Ordovician species. An apparent drop in species diversity precedes that faunal change. Conodonts of Silurian aspect above that contact represent the early Silurian (Llandoveryan) *Distomodus kentuckyensis* Biozone. This contact is a major regional sequence boundary that can be traced eastward into craton-margin sections in the Spring Mountains of southern Nevada. The lower negative excursion likely correlates with a large negative excursion in the upper Vinini Formation in Nevada and in the upper Vaureal Formation on Anticosti Island. The positive excursion correlates well with a large positive excursion in the upper Hansen Creek Formation in Nevada and in the upper Ellis Bay Formation on Anticosti Island. Our correlations are bio-, chemo-, and sequence-stratigraphically constrained, and suggest that Hirnantian glacioeustasy was of relatively short duration, not protracted as suggested by the North African tillite record. The data further suggest that the influx of high latitude (cold-water) marine faunas during Hirnantian glacioeustasy accompanied a major positive shift in C-13 ratios, either of which can be used as a significant correlative tool because of their association in North American sections near the O/S systemic boundary.