

ABSTRACT

This study was designed to test two main hypotheses concerning ocean water temperature change during the Late Devonian (Frasnian-Famennian) mass extinction: 1) global marine waters progressively cooled from the Late Frasnian into the Famennian, and 2) the paleotemperature changes affected both deep marine and shelf environments in a similar manner. Two coeval Late Devonian sections in eastern and central Nevada (Upper Devils Gate and Upper Guilmette formations, interpreted previously as deep water slope deposits and shallow shelf deposits respectively) were chosen for the study. Samples were collected for oxygen isotope analysis using conodont derived apatite.

Results from both sections yielded too few conodonts to conduct oxygen isotope analysis. Thin section data from the Devils Gate section indicate that it is a shallow intertidal environment with shallow water slumps and debris flows, suggesting that it is the uplifted forebulge depozone of Pilot Basin formed in the early part of the Antler Orogeny.