

Sedimentology and high-resolution stratigraphy of the Shaftesbury Formation (Late Albian), NE British Columbia

Piotr Jan Angiel

The University of Western Ontario, Department of Earth Sciences,
London, Ontario, Canada N6A 5B7.

pangiel@uwo.ca

The project is integrating outcrop sections with wireline log data from ~500 wells to build a sequence stratigraphic correlation grid over an area of about 50,000 km². This proxy chronostratigraphy provides a basis for facies and paleogeographic mapping. Resulting isopach maps will allow the subsidence history to be reconstructed in three dimensions on small time-steps. This 3-D approach will provide a means of differentiating eustatic and tectonic controls on accommodation.

The abundance of mudstone in the Shaftesbury Formation makes it an ideal natural laboratory in which to study patterns and mechanisms of mud dispersal on an ancient marine shelf - a topic of intense current interest and debate. In particular, the relative importance of fluid mud transport by storm-driven versus gravity-driven flows will be investigated. The Shaftesbury rocks are strongly cyclical, and contain numerous, widely-traceable erosion surfaces that allow sequences to be defined and mapped. Isopach patterns will provide a proxy record of the shifting loci of contemporaneous thrust activity in the Cordillera. Ultimately, it is hoped that nearshore clastic sequences can be correlated with coeval pelagic successions to investigate the possibility of orbital forcing on sea-level changes as well as oceanic productivity.