The Cretaceous Nanaimo Group, B.C.: A Complicated Depositional History on an Active Margin

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The Nanaimo Group consists of Cretaceous sedimentary strata that infills the Georgia Basin in southwest British Columbia. Exploitation of Nanaimo Group coal deposits drove European colonization of Vancouver Island, and made the region a major port for the global shipping trade in the late 1800s and early 1900s. Historically, the Nanaimo Group was interpreted using a lithostratigraphic framework, which has been revised multiple times over the past 120 years. A robust sequence stratigraphic framework for the lower Nanaimo Group was only recently developed, and reveals a complicated depositional history that existed during the early stages of basin development. In this talk, we explore the newly developed sequence stratigraphic framework and the data used in its development (i.e., facies analysis, detrital zircon, biostratigraphy). Like many forearc basins globally, development and infilling of the Georgia Basin was controlled, in part, by variable subsidence rates, steep topography, and both regional and localized active faulting related to the position of this basin along an active margin.

The Nanaimo Group also resides at the heart of the controversial Baja BC hypothesis, which purports that Vancouver Island was situated at a paleo-latitude equivalent to northern Mexico during the Late Cretaceous. The new sequence stratigraphic framework provides the means to sample strata chronologically, and thus better constrain the timing of Vancouver Island movement relative to North America. This research is ongoing.