

Sequence Stratigraphy of Upper Cretaceous (Cenomanian-Turonian) Kaskapau Formation, B.C. & Alberta, Canada

By

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The purpose of my research is to map and analyze in 3D the sequence stratigraphy (allostratigraphic units) of the Upper Cretaceous Kaskapau Formation in the Western Canada Sedimentary Basin. The Kaskapau Formation has only been studied from a lithostratigraphic perspective, and there are no sedimentological or stratigraphical studies in the study area that explain the deposition of the Kaskapau Formation in terms of sediment supply, tectonic effects or sea level changes.

My research assumes fieldwork scheduled for four field seasons, each season being of one month. Well log data (gamma ray and resistivity) are used to correlate between the outcrop sections exposed around the rim of the basin, and in the subsurface. Well log data also permit detailed reconstruction of the 3D geometry of each sequence over an area of about 30,000 km². All the allostratigraphic units identified in outcrop and subsurface will be displayed as isopach maps. Thin sections of samples from outcrop and core will be examined in order to better understand possible clastic source areas.

This study will illustrate how sequences develop in a foreland basin during a full cycle of accelerating and decelerating accommodation rate during Cenomanian-Turonian. Other key aspects addressed by my research include: i) the role of the forebulge as a possible source area in retroarc foreland settings; ii) tectonic vs. eustatic controls on stratigraphy in foreland basins and iii) high frequency generation and removal of accommodation in a high subsidence setting (foredeep depozone).