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## So...is this where the dinosaurs went?



...eroded sandstone of the Geoffrey Formation(?) in Leboeuf Bay Gabriola.

This is not entirely a joke. The end of the Cretaceous and the beginning of the Tertiary Period marks the end of the “age of the dinosaurs”. This moment in time is known as the K–T boundary; K because in German, the Cretaceous is the “chalk time” or *Kreidezeit*. At the K–T boundary, 65 million years ago, the earth was hit by a large meteorite at Chicxulub, in Yucatan, Mexico. Dust and debris in the atmosphere may have blotted out the sunlight for several years, which, if so, would account for the extinction of many lifeforms on land and in the sea at that time. Evidence of this enormous impact is found worldwide, and although unlikely, it is nevertheless possible that it also exists on Gabriola.

The age of the extant uppermost rocks of the Gabriola Formation has not yet been precisely determined because of the lack of dateable material. The Gabriola Formation has 71-million-year-old detrital zircons in the sandstone right at the base, which would suggest the Gabriola-Spray contact is probably younger. As well, the few microfossils and macrofossils from the Spray Formation are generally considered Maastrichtian in age, thus again less than 71 million years old.

The Gabriola Formation is barren of macrofossils, but fossil pollen from the Gabriola Formation actually is more compatible with a Paleocene age for it, which would put it at less than 65 million years and mean there is a K-T boundary somewhere in the lower Gabriola Formation, or even perhaps the upper Spray (P. Mustard, personal communication).

The evidence for this might be in the form of tiny dust particles (shocked minerals, glass tektites, or concentrations of iridium); mats of coalified vegetation as whole forests died; an abrupt change in the nature of the sediments due to severe climate change, torrential rains for example; or the sudden disappearance or appearance of species in the microfossil record. None of these have been found so far, and it is unlikely they ever will, but, as somebody I used to know as a child would always say, there's no harm in looking. Coalified vegetation, locally over a metre thick, has been found in the Gabriola Formation sandstone (N. Windecker, personal communication). ◇