

## Geological Association of Canada – Pacific Section Field Trip

Our May 25, 2024 field outing to study Nanaimo Group rocks in the Englishman River area of central Vancouver Island went off without a hitch. Dr. Shahin Dashtgard of Simon Fraser University was our guide for the day, generously volunteering his time and expertise in Nanaimo Group strata to help tell the story of the outcrops we visited and contextually what Vancouver Island looked like 80 to 90 million years ago during the time of the dinosaurs. We traversed trails and bussed to sites that took us through strata of the Lower Nanaimo Group from its base to its uppermost sequences.

The first stop at Englishman River falls provincial park focused on the basal unconformity between Nanaimo Group strata (shale of the Haslam Formation) and the underlying Karmutsen Formation. At the location of the falls, we also observed a paleo rockfall landslide with large blocks of volcanic rocks infilled with mudstones and critters.



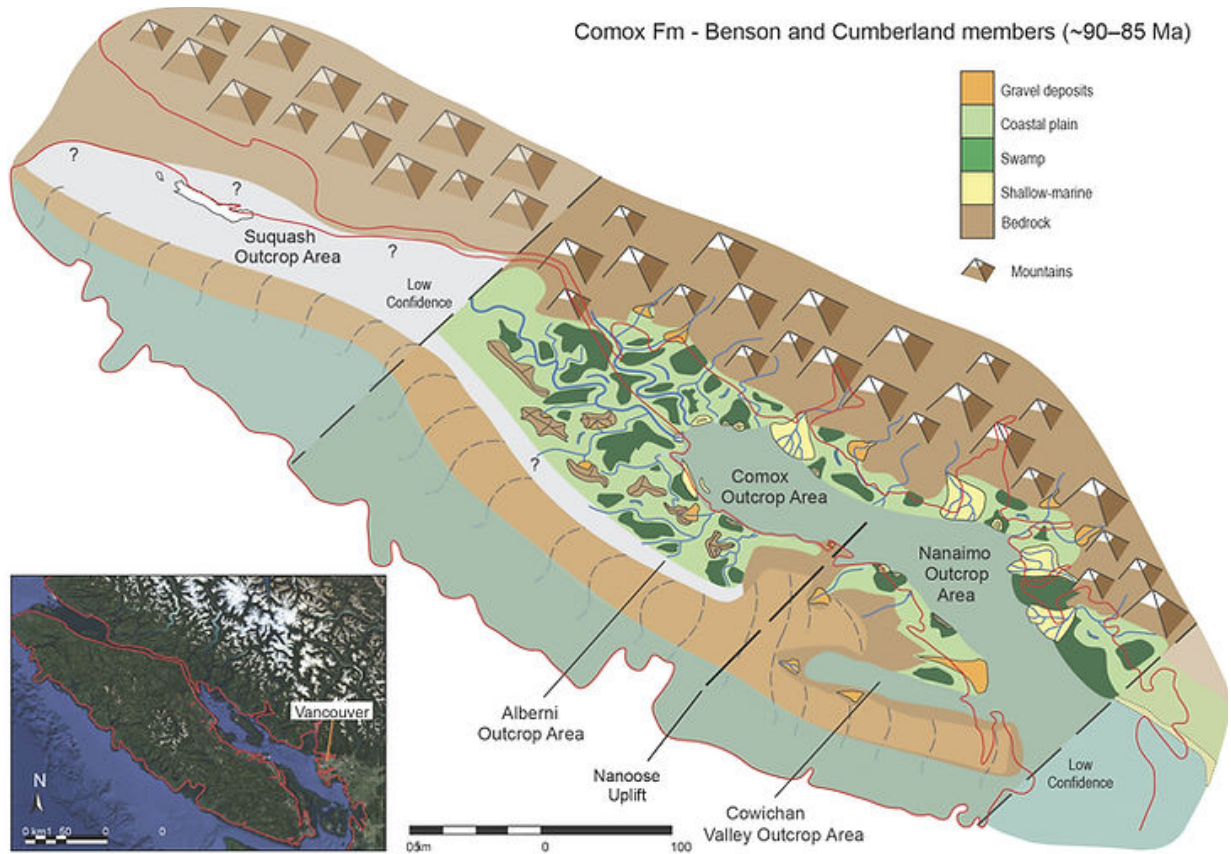
The second stop took us to the base of a cliff along the river exposing a sill of Neogene-age Catface Intrusion andesite in contact with shales of the Haslam Formation across the river.

At Top Bridge Park we stomped across a bridge and over pebbly sandstone of the Extension Formation noting the occasional crossbedding features.

The final stop at Madrona Point Park exposed impressive sequences of shallow marine strata of the Protection Formation. There was lots of discussion and queries about the transgressive sequences of sandstone and pebble conglomerate, the local paleo worm and critter populations and chunks of petrified wood.



The big picture was that of the convergent margin basin setting, when about 90 million years ago the volcanic core of Vancouver Island smashed up against the western side of North America, rising up and forming an island. With continued subduction of the Farallon Plate to the west, the drowning of the island commenced with the land covered by swamps and short rivers draining into a shallow marine basin (Comox Coalfield).



(source: Girotto et al)

By about 84 million years ago the island had become completely submerged. Elasmosaurs and Tylosaurs were buried in mudstones, depositing in several 100's of metres deep waters.

Between 83 and 80 million years ago the island re-emerged around the cities of Parksville and Nanaimo (Nanoose Uplift) and similar physiographic conditions of swamps and rivers deposited strata of the Nanaimo Coalfields.

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