

Geological mapping in the Stellarton Gap (NTS 11E/7,9,10,15), a status report

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The Stellarton Gap is underlain mainly by Carboniferous rocks. Stratigraphic units vary markedly in thickness across the area. In the north they are gently folded and unmetamorphosed. In the south the terrain is divided into blocks in a broadly east-west dextral strike-slip fault system. Deformation and induration in the blocks is unrelated to age and very varied.

The Windsor Group apart, Devonian-Carboniferous rocks in the gap are non-marine. The Fountain Lake, McAras Brook, Falls, Hollow and Claremont formations formed in alluvial fans adjacent to basement source highlands. The red sandstone to conglomeratic New Glasgow Formation constitutes an upward-coarsening, calcrete-bearing alluvial fan sequence related to strike-slip faulting. Clast size trends indicate northward transport. Possibly correlative conglomerate south of the Hollow fault may have been offset to the west by dextral fault movement. The more extensive sandy lower member is traceable northeastward to the centre of Merigomish Harbour, northward to Pictou Island in drill core and northwestward to the River John at longitude 63°2.5' and latitude 45°41.5'. The Canso Group

and Parrsboro Formation are mainly drab and lacustrine.

Late Devonian to early Carboniferous climate in Nova Scotia was tropical and relatively dry (calcrete, evaporites). Earliest evidence of monsoonal conditions (vertisols) was found in Namurian rocks. The Westphalian began with a pronounced wet phase, succeeded by seasonal climate of varied dryness. Evidence includes fluvial sandstones of the early Westphalian Boss Point and late Westphalian Malagash formations. In the former, channel and overbank deposits are drab and organic-rich. The latter is distinguished by generally red overbank deposits with vertisols and calcrete. Regionally, the wet phase produced leached soils and widespread drab, organic-rich, pyritic sandstone and quartz-pebble conglomerate (Boss Point, Silver Mine, Port Hood formations) which host a number of base metal deposits and prospects with metal type related to the underlying unit; e.g., Dorchester (Cu) on red, mafic-bearing conglomerate, Meadowville (Pb) on granitic conglomerate, Terra Nova (Zn) on hornblende granodiorite and Yava (Pb) on lead-rich felsic porphyry.