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**Bluestone formation of the Halifax Group:  
metamorphosed slope and mass-transport  
deposits, Halifax Peninsula, Nova Scotia**

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Fine-grained metasedimentary rocks of the Halifax Group in southern mainland Nova Scotia can be subdivided into mappable units. In Halifax Peninsula, pyrite-rich hornfels, black slate, metasiltstone, and metasandstone of the Cunard formation are overlain by grey metasedimentary rocks with abundant cross-laminations and local carbonate and calc-silicate concretions, assigned to the Bluestone formation, the highest part of the succession exposed in Halifax Regional Municipality. The most suitable type section lies along a railway cutting and adjacent roads into Point Pleasant Park. No fossils are known from the Bluestone formation but lithological correlatives elsewhere contain graptolites and acritarchs indicating Tremadocian age.

Contact metamorphism produced cordierite + biotite + muscovite + albite + ilmenite + pyrrhotite in pelitic horizons throughout Point Pleasant Park. The cordierite-in isograd marks the outer limit of the contact aureole north of a conspicuous grain elevator; the biotite-in isograd is predicted to lie ~200 m to the south. Andalusite ± K-feldspar appear west of Northwest Arm; the andalusite-in isograd is interpreted to run under the Arm, curving inland towards Williams Lake. The distribution of andalusite contrasts markedly with the underlying Cunard formation, where chiastolite appears before biotite in graphitic slates in the outer aureole.

Despite visits to the formation by generations of geology students, no stratigraphic subdivisions have previously been mapped. The formation is here divided into four members. The lowest (Point Pleasant member) contains thin parallel-laminated and cross-laminated metasandstone beds with Bouma Tbcde and Tede structures, and thicker beds with Bouma 'a' divisions. The overlying Black Rock Beach member lacks the thicker massive beds and is dominated by rippled and cross-laminated metasedimentary rocks. The Chain Rock member,

an erosion-resistant ridge-forming unit, shows bedding disrupted by folds, boudinage, and localized shear zones, interpreted as synsedimentary. The overlying Quarry Pond member consists of thinly bedded coherent metasedimentary rock that generally resembles the Black Rock Beach member.

Although there are indications of upward shallowing in equivalent successions elsewhere in the Halifax Group, the presence of a major mass transport deposit in the Bluestone formation shows that this part of the Halifax Group was deposited on a generally NE-facing submarine paleoslope.