
**The alteration of the Neoproterozoic Georgeville
Group in the aureole of the Georgeville Pluton,
Antigonish Highlands, Nova Scotia**

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The Antigonish Highlands is one of the many fault-bounded blocks comprising the Avalon Composite Terrane, which originated as a volcanic arc regime associated with subduction along the Gondwanan margin prior to Laurentia's accretion. They are predominantly underlain by the Neoproterozoic Georgeville Group, a succession of arc-related volcanic rocks overlain by syntectonic and genetically related volcanoclastic turbidite sequences deposited in a deep, quiet water basin. It is subdivided into four fault-bounded blocks. The northernmost Georgeville Block is subdivided into three distinct formations, the Livingstone Cove, Morar Brook and Chisholm Brook Formations. The Morar Brook Formation is made up of turbiditic mudstones and siltstones with occasional thin interbeds of chert and limestone. The fine-grained mudstone is iron rich, with quartz, albite and occasional rutile present in a matrix of sericite and chlorite with minor biotite. Elongate pyrite is visible in the darker laminae. The siltstone has a similar lithology, but is coarser grained and contains variable amounts of lithic fragments, commonly slate or epidote bearing volcanic rocks. The Morar Brook Formation was post-tectonically intruded by the Georgeville Pluton, an A-type granite with an extremely depleted rare earth element signature. The intrusive contact of these units is exposed along the shoreline of the Northumberland Strait. It is steep, sharply defined, and, together with the greenschist metamorphic facies of the host rock, indicates epizonal emplacement of the pluton. Aureole effects are clear in a study area along one kilometer of coastline adjacent to the pluton. They include hornfelsic spotting, a high degree of silicification, and color changes in the host rock. An in-depth documentation of the alteration is being carried out using field relationships, petrographic microscopy, X-ray diffraction, and geochemical analysis.