

### Geological Mapping of Northern Cape Breton Island, Nova Scotia

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Mapping of the igneous and metamorphic rocks of the highland areas of northern Cape Breton Island from 1983-87 has resulted in the production of a compilation of all or parts of ten 1:50,000 map sheets. Approximately forty metasedimentary and metavolcanic units and sixty intrusive units have been distinguished. The mapping, compilation and on-going petrological and radiometric dating studies have permitted the identification of three contrasting tectonostratigraphic zones in northern Cape Breton Island. The Northwestern Highlands Zone is characterized by upper amphibolite- to granulite-facies, quartzofeldspathic and mafic gneisses, and deformed anorthosite, gabbro and syenite bodies which appear to be a portion of Grenvillian

basement. The Aspy Zone contains middle to upper amphibolite-facies gneissic and metavolcanic and metasedimentary units intruded by compositionally varied granitoid plutons. The main tectonometamorphic and plutonic event occurred in the Devonian, and was followed by rapid uplift. The Bras d'Or Zone displays low pressure, upper amphibolite-facies, gneissic basement, a widespread carbonate-clastic sequence, and Late Precambrian to Cambrian dioritic, granodioritic, and granitic plutons. In the northern part of the zone, dioritic to granodioritic plutonism is particularly extensive. The boundaries between the zones are represented by mylonite zones, many of which have been retrograded under greenschist-facies conditions.