

boniferous geology of this area is characterized by four main units: Bras d'Or Gneiss, George River Metamorphic Suite, Late Proterozoic plutonic rocks and Late Cambrian plutonic rocks, all intruded by abundant mafic dykes. Carboniferous sedimentary rocks of the Horton and Windsor groups unconformably overlie all of these units, constraining the age of emplacement of the dykes to between Late Cambrian and Late Devonian. This study focuses on the petrography and geochemistry of the mafic dykes, in order to determine their petrological characteristics and decide whether they represent a single suite or were emplaced in more than one episode. Preliminary petrographic examination indicates that the dykes are of several types: amphibole-bearing dykes, clinopyroxene-bearing dykes, fewer plagioclase-rich dykes and some samples showing more varied mineralogy. The dykes are altered and contain abundant secondary minerals including chlorite, epidote, calcite, quartz, sericite, actinolite, and prehnite, but the extent of alteration is variable. Most of the dykes are fine-grained and some are amygdaloidal, indicative of shallow emplacement. At least two of the dykes are lamprophyric, and contain biotite phenocrysts. More detailed petrographic study is needed to determine if systematic variations exist with geographic location or host unit. Mineralogical compositions will be determined by electron microprobe in the least altered dykes. Whole-rock geochemical data will assist in assessing chemical affinity and tectonic setting during emplacement. The results will be compared to those from other studies of mafic dykes in the Bras d'Or terrane and adjacent Mira terrane to help interpret the tectonic implications of the emplacement of the dykes.

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**Petrology and tectonic implications of mafic dykes  
in the Kellys Mountain area, Cape Breton Island,  
Nova Scotia**

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The Kellys Mountain area of Cape Breton Island is located in the central-eastern part of the Bras d'Or terrane. The pre-Car-