High-Grade gneisses of the Blair River Complex in the northwestern Cape Breton Highlands

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The high-grade metamorphic rocks of the Blair River Complex have been particularly problematic in large-scale mapping projects in the northwestern Cape Breton Highlands. Lithologic variations occur over small distances making subdivision of the various units difficult at scales mapped. However, more recent mapping and petrographic study has resulted in the recognition of three distinct lithologies; a paragneissic unit, an orthogneissic unit, and amphibolites as dikes and small bodies. The paragneissic unit is largely recognized on the basis of petrographic study and hence its field relations with other units are unclear. However, the samples recognized as paragneiss occur predominantly along the extreme western, northern and northeastern portions of the Blair River Complex (spatially associated with the presently exposed "edges" of the complex).

Mineralized carbonate xenoliths of the Meat Cove zinc occurrence also are spatially restricted to the edge of the main body of the Blair River Complex, although it is unclear what relationship, if any, these xenoliths have with the paragneissic unit. This unit has been metamorphosed to at least biotite isograd, and in some areas to garnet isograd. Orthogneisses occupy the vast majority of the core of the Blair River Complex and vary widely in lithology. They are comprised of quartzo-feldspathic and granitic to syenitic gneisses, metamorphosed to upper amphibolite and locally to granulite facies. Further subdivision of this unit is necessary, but not yet possible. Amphibolites occur as dikes and small bodies in the orthogneissic unit, locally making up a significant proportion of the unit.