

A new geological map of the Kingston terrane, southern New BrunswickS.M. Barr¹, C.E. White² and M.J. McLeod³¹*Department of Geology, Acadia University, Wolfville, Nova Scotia B0P 1X0, Canada <sandra.barr@acadiu.ca>*²*Nova Scotia Department of Natural Resources, P.O. Box 698, Halifax, Nova Scotia B3J 2T9, Canada*³*New Brunswick Department of Natural Resources, Geological Surveys Branch, P.O. Box 1519, Sussex, New Brunswick E0E 1P0, Canada*

Remapping of the Kingston terrane shows that it consists mainly of Silurian metavolcanic rocks of the Bayswater Group and associated granitoid plutons and amphibolite dykes. On the northwest, the brittle Belleisle fault separates the Kingston Terrane from Neoproterozoic and Lower Paleozoic granitoid, volcanic, and sedimentary rocks of the New River Terrane. On the southeast, the Kennebecasis fault separates the Kingston Terrane from mainly Neoproterozoic metamorphic and plutonic rocks of the Brookville Terrane. Farther southwest, well developed mylonitic rocks occur along this margin, but it is not yet clear whether or not rocks of the Kingston Terrane are involved in these mylonitic zones. Timing of terrane juxtaposition has not yet been well constrained but was probably Late Silurian and Devonian.

The Bayswater Group is divided into six, as yet unnamed, formations on the basis of lithologic variations. Most of the formations consist of dacitic and rhyolitic crystal and lithic

crystal tuff. Two formations are dominated by basaltic and andesitic tuff, and the most northerly formation includes abundant tuffaceous sedimentary rocks. The central core of the terrane consists mainly of texturally varied, high-level granitoid rocks. They have yielded a Silurian U-Pb age, similar to the age of the host volcanic rocks, and the granitoid and volcanic rocks are interpreted to be co-magmatic. All of these units contain amphibolitic dykes, but they are most abundant in the granitoid core of the belt. Because the dykes tend to be more resistant to weathering than their host rocks, they form many of the outcrops in the terrane. Regional metamorphic grade may decrease from southeast to northwest across the Kingston Terrane, but no increase in metamorphic grade was noted from northeast to southwest along trend, in contrast to previous interpretations which suggested that grade increases to the southwest