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**Preliminary bedrock geology of the eastern Cobequid  
Highlands, northern mainland Nova Scotia**

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The eastern Cobequid Highlands were remapped during the summer of 2012 to provide better understanding of the geology and economic potential of the area. The mapping confirmed early division of the area into two blocks, Bass River and Jeffers, but redefined some of their components. The oldest units in the Bass River block are the < 900 Ma Gamble Brook and Folly River formations of the Bass River Complex. The Gamble Brook Formation occurs along the faulted margins of the block and consists of metasedimentary rocks. The Folly River Formation forms the core of the block and consists of back-arc-related mafic metavolcanic rocks and ironstone and hence has potential for VMS deposits. Both formations are intruded by a suite of Late Neoproterozoic calc-alkaline granite to diorite/gabbro plutons (Debert River, Frog Lake, and McCallum Settlement) and a Devonian suite of alkali-feldspar granite plutons (Guyon Brook and Polson Mountain).

The oldest unit in the Jeffers block is the ca. > 850 Ma paragneissic and orthogneissic Mount Thom Complex which was intruded by the ca. 755–735 Ma calc-alkaline Mount Ephrairn plutonic suite consisting of granite to gabbro, and also by a suite of Ordovician within-plate syenitic and gabbroic rocks. In faulted contact with the older units is the Late Neoproterozoic Dalhousie Mountain Formation which consists of volcanic and sedimentary rocks intruded by dioritic to granitic plutons. Fossiliferous Silurian sedimentary rocks of the Wilson Brook Formation are in faulted contact with the older units. Devonian and Carboniferous sedimentary and volcanic rocks of the Byers Brook, Diamond Brook, and Nuttby formations and related A-type Hart Lake-Byers Lake plutons are in faulted contact with older units in both the Jeffers and Bass River blocks and are hosts to REE and epithermal Au-style mineralization. Numerous IOCG-style mineral occurrences occur along the southern flank of the eastern Cobequid Highlands.