

Preliminary Geological Map of the Digby Area, Nova Scotia¹

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Lower to middle Palaeozoic units in the Digby area, southwest Nova Scotia, include the Goldenville and Halifax formations of the Meguma Group and the overlying White Rock and Torbrook formations. The Goldenville Formation consists of metasandstone with lesser, although variable amounts of, slate and metasilstone. The Halifax Formation has been subdivided into three members, including (from bottom to top); (1) the Bloomfield member, consisting of distinct maroon and green (locally variegated), laminated metasilstone; (2) the Acacia Brook member, consisting grey laminated metasilstone and; (3) the Bear River member, consisting of slate and silty slate characterized by thin cross-laminated metasilstone. This unit typically has abundant trace fossils and local graptolites. The White Rock Formation consists of cleaved, dark, silty slate, similar to the Bear River member, and local thick (25-30 m) quartzite beds. Trace fossils are common. An apparent disconformity or angular unconformity occurs with the underlying Halifax Formation. The Torbrook Formation conformably overlies the White Rock Formation and consists of mainly dark silty, locally fossiliferous shale, black siltstone and minor ironstone. The Lower to middle Palaeozoic rocks are cut by abundant mafic sills, including early (syndepositional?) fine-grained folded sills restricted to the Halifax Formation, gabbroic sills that post-date the Halifax Formation but predate the South Mountain Batholith, and younger undeformed sills related to the North Mountain Formation.

Lower to middle Palaeozoic units are folded into regional, northeast-trending F_1 folds; however, at a regional scale these units systematically young to the east with no map-scale repetition of units. This implies a regional-scale monocline with the Goldenville Formation and Bloomfield and Acacia Brook members defining an east-dipping limb in the west, the Bear River member representing a shallow limb in the central part, and the White Rock and Torbrook formations forming an east-dipping limb in the east. Post F_1 deformation includes kink folds throughout the area and crenulation cleavage developed in the west part of the area, particularly within the Acacia Brook and Bloomfield units. Several minor steep north- to northwest-trending faults cut the area.

The ca. 370 Ma South Mountain Batholith and Ellison Lake Pluton intruded the Lower to middle Palaeozoic units and produced contact metamorphic aureoles characterized by hornfels with cordierite, biotite and andalusite porphyroblasts.

To the north a conformable sequence of Triassic to Jurassic sedimentary rocks (Wolfville and Blomidon formations) and basalt (North Mountain Formation) unconformably overlie the older units.

¹ in Atlantic Geoscience Society, Annual Colloquium, Amherst, Nova Scotia; *Atlantic Geology*, v. 35, no. 1, p. 105-106.

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