

Precambrian geology of the western Cobequid Hills,
Nova Scotia

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Late Precambrian volcanic, sedimentary and plutonic rocks outcrop over some 100 square kilometres north of the Cobequid Fault in the western Cobequid Hills. The Jeffers Brook Formation of volcanic, pyroclastic and deep-water siliciclastic rocks has recumbent folds and a flat lying penetrative cleavage that were formed prior to the intrusion of the Late Hadrynian Jeffers Diorite. Hornblende gabbro intrusions east of the Jeffers Diorite thermally metamorphosed part of the Jeffers Brook Formation prior to the main deformation. The oldest rocks in the area are marbles, shales and quartzites, possibly correlative with the

Green Head Group. These rocks were also thermally metamorphosed prior to acquiring a flat lying penetrative cleavage. The margin of the Jeffers Diorite and parts of the Jeffers Brook Formation are cut by large complex dykes and sills of basalt and pink porphyritic rhyolite. These do not cut nearby Silurian rocks. Metamorphic biotite is widespread in both mafic volcanics and siliciclastic rocks of the Jeffers Brook Formation and in the complex sills and dykes. Texturally the biotite appears both syn- and post-tectonic; a radiometric age of 303 Ma is probably an unroofing age.