

Geology of the Slacks Lake area, Bathurst Camp, New Brunswick

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The Slacks Lake area is underlain by sedimentary, volcanic and hypabyssal intrusive rocks of the Ordovician Tetagouche Group, and by granitoid rocks of the Siluro-Devonian Miramichi and North Pole Stream plutons. Stratigraphic mapping is complicated by numerous sub-parallel faults and associated splays of the broad Pringle Brook-Moose Lake dextral fault system, which transects the survey area in an east-west direction and dissects the central part of the area into a series of narrow slices. This fault system represents a major tectonic break, as Tetagouche Group stratigraphic nomenclature defined for the northern part of the Bathurst Camp is not, in some cases, appropriate south of the fault zone. Hence, rocks to the north of the Pringle Brook-Moose Lake fault system can be assigned (from oldest to youngest) to the Patrick Brook, Nepisiguit Falls, Flat Landing Brook, and Boucher Brook formations, whereas south of the fault zone, the Clearwater Stream Formation and Stony Brook volcano-plutonic complex have been identified as the stratigraphic equivalents of the Nepisiguit Falls and Flat Landing Brook formations, respectively.

The Patrick Brook Formation consists of dark grey shales, slaty siltstones, and fine-grained quartzites. The Nepisiguit Falls Formation consists of light greyish green to greyish brown

quartz-feldspar-phyric felsic volcanic rocks that, compared to most Nepisiguit Falls Formation rocks elsewhere, are notably crystal-poor, and commonly resemble fine-grained flows. The Flat Landing Brook Formation comprises light greyish green to greyish brown, typically feldspar-phyric felsic volcanic flows and related flow-margin breccias (hyaloclastites). The Clearwater Stream Formation consists of medium greyish green, chlorite and/or sericite-rich, schistose, feldspar-phyric, felsic pyroclastic rocks. The Stony Brook felsic complex includes: light greyish green to greyish pink, aphyric or feldspar-phyric, massive to schistose felsic volcanic rocks; greyish pink to greyish brown, massive, porphyritic hypabyssal intrusive rocks typically containing large euhedral to subhedral phenocrysts of K-feldspar; and minor dark grey shale. The Boucher Brook Formation consists mainly of dark green mafic volcanic rocks, with lesser sedimentary rocks and felsic hypabyssal intrusions. Sedimentary rocks include dark grey shale and siltstone, black carbonaceous shales and cherts, and (intercalated with the mafic volcanic rocks) local thin beds of dark grey ironstone and red-maroon shale or chert. Local olive green, massive, trachytic, hypabyssal intrusive rocks in the east-central part of the area have also been assigned to the Boucher Brook Formation.