

Lithostratigraphy of the Late Devonian-Early Carboniferous Horton Group of the Moncton Subbasin, southern New Brunswick

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The Horton Group in the Maritimes Basin of eastern Canada represents the basal unit in a succession of molasse-type sediments which accumulated in an essentially non-marine, post-orogenic, successor-type basin. Present distribution of the Horton Group represents the erosional remnants of a complex series of basin and arch structures which controlled sediment distribution and character.

The Moncton subbasin is a northeasterly trending, southwesterly narrowing basin, bounded on the south by the Caledonia Uplift, the north by the Kingston - Indian Mountain Uplift and the east by the Westmorland Uplift. The Caledonia Uplift provided a continuous supply of detrital material; the others were passive features during most of Horton Group deposition. Horton Group strata which accumulated in the Moncton subbasin are characterized by a complex series of alluvial fan, fluvial-deltaic and lacustrine sediments.

The Horton Group, in this area, is subdivided into the basal Memramcook Formation, the medial Albert Formation and the upper Moncton Formation. The Albert Formation can be divided into a series of five members; the Dawson Settlement, Frederick

Brook, Hiram Brook, Gautreau and Round Hill members. The Moncton Formation can be divided into a basal Weldon and upper Hillsborough member.

Complex temporal and spatial development of Horton Group lithofacies make basin wide correlation of formations and members difficult and sometimes speculative. Stratigraphic designations made with any certainty must be based on the occurrences of certain key units.

For example, it is difficult or impossible to differentiate between the Memramcook and Moncton formations without the presence of the medial Albert Formation, and within the Albert Formation the distinction between the Hiram Brook and the Dawson Settlement members is difficult without the medial Frederick Brook or overlying Gautreau members. Within the Moncton Formation, distinction of the Weldon and Hillsborough members is dependent on the recognition of the unconformable contact.

The study of the Horton Group in the Moncton Subbasin has pointed out the unsatisfactory nature of the previous stratigraphic nomenclature, the modification of which has indicated areas which will be classified and expanded by future work.