

### **Cumberland Basin Stratigraphy: The Classic Joggins Section of Logan and Fletcher, and Windsor Group Correlation**

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The Joggins shore section is located in the western part of the Cumberland Basin. It contains a superb, almost completely exposed cross-section through parts of the Minudie Anticline and the Athol Syncline extending 55 km from Mill Cove (Minudie) in the north to Squally Point in the south. The section is made up of over 5000 m of gently-dipping strata, ranging in age from Viséan to Westphalian D, which are only locally disturbed by faults. Rocks of the Canso, Riversdale and Cumberland groups are well exposed in cliffs and wavecut platforms along the shore. The Canso Group strata can be divided into the red sandstones and siltstones of the Middleborough Formation and the grey sandstones and red shales of the Shepody Formation. The Riversdale Group is represented by the conglomeratic Claremont Formation and the overlying grey sandstone-dominated Boss Point Formation. The Boss Point Formation may in turn be subdivided into the Dogfish Reef, Boss Quarry, Bacon Ledge and North Reef members based on sand/silt ratios. The Cumberland Group is divided into the Joggins, Springhill, Ragged Reef and

the Malagash formations. The Joggins Formation and the Springhill Formation constitute the fine grained strata that contain exploitable coal resources. The Ragged Reef Formation, although coal-bearing, is dominated by pebbly sandstones and fine conglomerates with only thin shale and coal interbeds. The Malagash Formation also contains significant coal beds, however it can be distinguished from other strata by the predominance of red coloration and age. Although not present in outcrop at Mill Cove, the Windsor Group (B Subzone) section is dominated by redbeds with at least three distinct marine carbonate units. These units are recognized and correlatable in outcrop over 60 km from Pugwash across the basin to Minudie. Younger Windsor Group carbonate members are apparently not widespread in the Cumberland Basin due to nondeposition or erosion. The carbonates may be facies equivalent to continental red beds analogous to equivalent rocks in southern New Brunswick where marine carbonates are rare and the section is dominated by continental red beds.