

## THE WATER POWERS OF NOVA SCOTIA

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**T**HE Province of Nova Scotia, like its capital city Halifax, is almost entirely surrounded by water, the narrow isthmus which connects it to the mainland being only about fifteen miles at its narrowest point. The extreme eastern portion, Cape Breton Island, is separated from the other part of the province by the Strait of Canso.

Nova Scotia, including Cape Breton, is about 400 miles long with an average width of about 75 miles and lies in a northeasterly and southwesterly direction. Its total area, including a large proportion of water surface, is 21,430 square miles with a population approximately 500,000.

Nova Scotia may be classified, according to its general topography, into four main divisions, namely: Cape Breton, the Atlantic Drainage, the Midland District and the Valley District.

The whole central area of Cape Breton is occupied by the Bras D'Or Lakes at sea level, which are connected to the Atlantic by narrow channels. The streams from a water-power standpoint are only adaptable for local use at certain seasons of the year.

The Atlantic Drainage comprises by far the largest part of the province and includes the following counties: Guysboro, Halifax, Lunenburg, Queens, Shelburne, Yarmouth and Digby.

The largest rivers of the province, such as the Tusket, Liverpool, Medway, La Have, East River Street Harbor and St. Mary, occur in this division, as also the best harbors, including the city of Halifax itself. The whole area is practically studded with lakes of considerable size.

The rivers are generally large and terminate in tidal harbors of large size and moderate depth with high, rocky shores.

This drainage section referred to possesses a large amount of potential water power which can be made available by developments of a general low and medium head type.

The Midland District includes the counties of Hunts, Colchester, Cumberland, Picton and Antigonish and is distinguished from the other districts in that it contains no lakes of consequence.

There are no water-power sites of any great magnitude in this whole district though there are a number of small sites well suited for local use.

The Valley District includes only the counties of Annapolis and Kings. The prominent stream in this area is the Annapolis River, flowing through a large valley and into a tidal basin to the Bay of Fundy. The tidal range at its mouth is about 50 ft. Flowing into the Annapolis River, particularly from the south, are a number of small but extremely precipitous streams which literally tumble from a height of 500 or 600 ft. into the river. Paradise River is one of the most characteristic of this type, while the Nictaux, a somewhat larger river, flows in a narrow valley and is not so precipitous.

The Cornwallis River corresponds in all respect to the Annapolis River except it is smaller and flows in an easterly direction emptying into Minas Basin.

It is obvious that the smaller precipitous streams mentioned with lakes at their heads, present opportunities for power developments of moderate size at relatively small cost.

In general, Nova Scotia has many sites which from their location, distribution and size are well suited to meet the immediate and prospective industrial needs of the country. The large precipitation throughout all parts of the province with its even geographical distribution and the proximity of the larger power sites to deep sea harbors are distinct advantages. The water power resources of the province with the exception of Cape Breton and a certain section of the Midland District, are much larger than are required to meet any market demands yet realized or contemplated. Stream measurements are obtainable at thirty-five different stations throughout the province.

Meteorological and evaporation stations are now being maintained throughout Nova Scotia by the Canadian meteorological service at twenty-four different stations.

Following are the different drainage basins: Bloody Creek, Dartmouth Lakes, Fall River, Gasperean River, Gold River, Indian River, North-East River, Kearney Lakes, Lequille River, Paradise River, Pennant River, Sackville River.

Bloody Creek for many years has been a source of power for small saw and grist mills and has for the past eleven years supplied Bridgetown with electricity for lighting and other purposes by means of a small hydro-electric plant. This brook rises in a small lake known as Godfrey Lake at an elevation of about 700 ft. above sea level and distant about 12 miles from Bridgetown; it joins tidewater at the Annapolis River. The total area of the drainage basin is 24 square miles, of which 21 square miles is available for power purposes.

The Dartmouth Lakes drainage basin lies immediately north of the town of Dartmouth and the main outlet flows directly south through the centre of the town, emptying into Halifax harbor.

The area of the whole watershed is 13.4 square miles of which about 1.5 square miles is water surface. Approximately 6.7 square miles is made tributary to the Dartmouth Lakes by artificial means. Maximum elevation, about 300 ft. above sea level. The town of Dartmouth receives its municipal water supply from Topsail Lake, the drainage basin of which immediately adjoins that of Loon Lake at the headwaters of the Dartmouth Lakes drainage basin. The Starr Manufacturing Co. controls practically all the power possibilities of this basin. The town of Dartmouth also operates a small hydro-electric plant for street lighting. The water for this plant is drawn from the municipal supply, but is discharged from the tailrace of the small plant into Sullivan Pond, becoming part of the Dartmouth Lakes drainage.

Fall River drainage basin lies about 12 miles directly north of the city of Halifax. The area available for water purposes is 17.5 square miles, of which 2 square miles is water surface and has a maximum elevation of about 600 ft. The Waverley Gold District adjoins the southern end of the basin and the Montague gold mining areas within seven miles of it. One power development operates in this basin a Leffel turbine 40 h.p. by Miller and McPherson.

Gasperean River drainage area, 148 square miles, of which 11 square miles is water surface. Its mean elevation is 650 ft. above sea level.

The Cornwallis Valley with the towns of Kentville and Wolfville immediately adjoins the Gasperean Valley on the north. The Dominion Atlantic Railway crosses the Gasperean River near its mouth and runs approximately parallel to it for a distance of four or five miles.