

With so many common watersheds, it is not surprising that late in the 19th century a good many water problems were emerging along the Canada-US frontier. After extensive bilateral discussions, the Boundary Waters Treaty was signed in 1909. This treaty set out clear limitations of the freedom with which one country could act if such action might affect the other country. Under the treaty, the International Joint Commission was created to deal with problems that could arise along the boundary. Over the years the commission has dealt with problems in international basins extending from the Pacific to the Atlantic Ocean, ranging from small streams to the mighty St. Lawrence River where average flow, at the International Power Project at Cornwall, Ontario, is approximately 245,000 cu ft per second ( $6\,937\,628\text{ dm}^3/\text{s}$ ). More recently, the International Joint Commission was given primary responsibility for overseeing implementation of the Canada-US Agreement on Great Lakes Water Quality, with the goals of improving water quality in those areas of the Great Lakes suffering from pollution and ensuring that Great Lakes water quality will be protected in the future.

Table 1.5 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indentation of names; thus, the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

The accompanying map shows the major drainage basins of Canada. Probably the most important is the Atlantic drainage basin, being dominated by the Great Lakes-St. Lawrence system which drains an area of approximately 678,000 sq miles ( $1\,756\,012\text{ km}^2$ ) and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From the head of Lake Superior to Belle Isle at the entrance of the Gulf of St. Lawrence the distance is 2,280 miles (3669 km). The entire drainage area north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield, a rugged, rocky plateau with many tributary rivers. These rivers, as well as the St. Lawrence itself, provide much of the electric power necessary to operate the industries of the area. South of the St. Lawrence, the smaller rivers are important locally. The Saint John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin is the largest in area and its main river is the Nelson. The Winnipeg River, a tributary of the Nelson, is completely developed for hydro-electric power but development of the Nelson itself is just beginning. The Saskatchewan River, tributary to the Nelson, drains the great agricultural region of the mid-west and is an important source of water for irrigation and hydro-electric power.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers. It flows 2,635 miles (4241 km) from the head of the Finlay River to the Arctic Ocean and drains an area of approximately 700,000 sq miles ( $1\,812\,992\text{ km}^2$ ) in the three westernmost provinces and the two territories. Except for a 16-mile (26 km) portage in Alberta, barge navigation is possible from Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles (2736 km).

The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, through steep canyons and over innumerable falls and rapids. They provide power for large hydro-electric developments and in season swarm with salmon returning inland to their spawning grounds. The Fraser River rises in the Rocky Mountains and, toward its mouth, flows through a rich agricultural area. The Columbia is an international river which has a total fall of 2,650 ft (808 m) during its course and has thus a tremendous power potential. Although a considerable part of the United States potential has been developed, the Canadian portion of the basin remained relatively untouched until recent years when three large reservoirs were constructed in Canada under the terms of the Columbia River Treaty. These reservoirs make it possible for British Columbia to develop up to 4000 MW of hydro-electric generating capacity in the Columbia basin in Canada. The Yukon