ocean-going vessels into the heart of North America and constitutes one of the largest single reserves of freshwater in the world. The vastness of this water area is evident from the fact that the lakes are able to absorb and moderate large variations in flow entering them and still maintain remarkably uniform outflows.

The Hudson Bay drainage basin is the largest in area but sparse rainfall in its western region places it second highest in terms of river flow, behind Atlantic drainage. It is noted for agriculture on the West and hydroelectric development on rivers surrounding Hudson Bay.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers. It flows from the head of the Finlay River to the Arctic Ocean and drains an immense area in the three western provinces and northern territories. Except for a 26 km portage in Alberta, barge navigation is possible from Fort McMurray on the Athabasca River to the mouth of the Mackenzie, a distance of 2700 km.

The Pacific drainage basin contains rivers that rise in the mountains of the Cordilleran region and flow to the Pacific Ocean through steep canyons and over innumerable falls and rapids. They provide power for large hydroelectric developments and in season swarm with salmon returning inland to their spawning grounds.

Use of inland water. Dams built across large rivers have met the major share of Canada's electric energy needs over past years and still meet two-thirds of that need today. Recreation, transportation, wildlife and fisheries are other important uses of water in its natural setting.

Uses which withdraw water from its source are classified as municipal and industrial. Current industrial uses and their relative share of water are thermal power generation (cooling) 52%, manufacturing 27%, agriculture 8% and the mineral industry 2%. The remaining 11% is attributed to municipal water use. In manufacturing and the mineral industry, water is recirculated, that is, it is used more than once before being returned to source. Agriculture is the only use that consumes most of the water withdrawn, with as little as 23% being available for other users; in contrast, thermal electric generation returns to source more than 99% of the water withdrawn.

1.2.3 Coastal waters

Canada's coastlines, measuring nearly 244000 km on the mainland and offshore islands, are collectively among the longest of any country in the world.

Atlantic. Along this coast, over time the sea has inundated valleys, lower parts of the Appalachian Mountains and the Canadian Shield. The submerged continental shelf has great width and diversity of relief. From the coast of Nova Scotia, its width varies from 60 to 100 nautical miles, from Newfoundland 100 to 280 nautical miles at the entrance of Hudson Strait, and northward it merges with the submerged shelf of the Arctic Ocean. The outer edge varies in depth from 183 to 366 m. The overall gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaus, banks, ridges and islands. The 73 m line is an average of 12 nautical miles from the Nova Scotia Coast and is the danger line for shipping. The whole floor of the marginal sea is traversed by channels and gullies cutting deep into the shelf. Large areas undergo constant change because of continuous marine deposit of materials eroded by rivers, wave action, wind and ice.

Hudson Bay and Hudson Strait bite deeply into the continent. Hudson Bay is a shallow inland sea 822324 km^2 in area having an average depth of about 128 m; the greatest depth in the centre of the Bay is 258 m. Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 796 km long and from 69 to 222 km wide; its greatest depth of 880 m is close inside the Atlantic entrance. There are great irregularities in the seafloor but few navigational hazards, except in inshore waters.

Pacific. The marginal sea of the Pacific differs strikingly from other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief — a repetition of the mountain landscape. Numerous inlets penetrate the mountainous coasts for distances of 93 to 139 km. They are usually a nautical mile or two wide with deep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 nautical miles to its limit at depths of about 366 m. The seafloor drops rapidly from the western slopes of Vancouver Island and the Queen Charlotte Islands. These detached land masses are the dominant features of the Pacific marginal sea. Numerous shoals and pinnacle rocks necessitate cautious navigation.

Arctic. The submerged plateau extending north of North America is part of the great continental shelf surrounding the Arctic Ocean, on which lie all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf north of Siberia is about 500 nautical miles wide; north of North America it surrounds the western islands of the Archipelago and extends 50 to 300 nautical miles seaward from the outermost islands.