

822 324 km<sup>2</sup> 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.

The floor of the submerged continental margin is nearly flat to gently undulating, with isolated rises and hollows. Most of it slants seaward with an abrupt break at the outer edge to the continental slope. From the Alaskan border eastward to the mouth of the Mackenzie River the shelf is shallow and continuous with the coastal plain on the mainland; its outer edge is at a depth of about 64 m and 40 nautical miles offshore. Near the western edge of the Mackenzie River delta it is indented by the deep Mackenzie Trough, formerly referred to as the Herschel Sea Canyon, whose head comes within 15 nautical miles of the coast. The submerged portion of the Mackenzie Delta forms a great pock-marked undersea plain, most of it less than 55 m deep, up to 75 nautical miles wide and 250 miles long. North and east of it, the continental shelf is more deeply submerged. Most of the well-defined continental shoulder is over 549 m deep, giving way to the smooth continental slope which extends to the abyssal Canada Basin at about 3 658 m. The deeply submerged continental shelf

runs along the entire West Coast of the Canadian Arctic Archipelago from Banks Island to Greenland. Major channels between the islands have flat floors at about the same depth as the shelf. A few local irregularities may be the result of glacial action. The only deep indentation is one sinuous canyon that heads off Robeson Channel at the northeastern end, close to Greenland. Submerged sides of the channels of the Archipelago, and slopes from the islands' western shores are marked in many places by a series of steps.

#### 1.2.4 Islands

Canada's largest islands are in the North in the Canadian Arctic Archipelago. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83°07' N.

The largest on the West Coast are Vancouver Island and the Queen Charlotte Islands, but the coastal waters are studded with many small rocky islands. The largest off the East Coast are the Island of Newfoundland, Prince Edward Island, Cape Breton Island, Grand Manan and Campobello islands of New Brunswick and Anticosti Island and the Îles de la Madeleine of Quebec.

Notable islands of the inland waters include Manitoulin Island, in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

The areas of principal islands by region are given in Table 1.6.

#### 1.2.5 Surveying and mapping

The Surveys and Mapping Branch (SMB) of the federal Energy, Mines and Resources department (EMR) is Canada's national mapping agency. The branch provides the precise geodetic survey framework which is fundamental to all other forms of surveying. The mapping of Canada has been completed at the scale of 0.4 cm to 1.0 km (1:250,000). All of the settled areas and many regions of northern development, amounting to more than 80% of the country, have also been mapped at a larger scale of 2.0 cm to 1.0 km (1:50,000). Photomaps derived from air photographs cover some of the areas mapped at the larger scale.

A legal surveys division of EMR manages and regulates surveys of federal lands, such as the northern territories, national parks, Indian reserves and offshore areas and is responsible for the custody of the related land survey information. The division is implementing a property mapping system which will form the base for a multipurpose land information system. It executes surveys on behalf of administering departments, collaborates in the demarcation and maintenance of