Island is a plateau of 500 to 1,000 feet altitude, which is deeply incised by numerous streams along the eastern side. There are very few lakes in this section, and many of the stream beds are broad, shallow, gravel-filled valleys. The red escarpment front of the plateau rises abruptly above a narrow lowland west of Browne Bay. The northeastern parts of the Island and the large rocky islands blocking the east side of Browne Bay are high and rugged, possibly reaching 2,000 feet altitude. This rugged section is probably caused by underlying Precambrian rocks which also appear on nearby northwestern Boothia Peninsula and western Somerset Island.

The eastern half of Victoria Island is similar in appearance to King William Island. A low, flat coast rises inland in low, gravel ridges and flattened domes across lake-dotted country. Outstanding hills are only a few hundred feet high. One of the most notable, Mount Pelly, near Cambridge Bay, is 675 feet high, and probably consists of unconsolidated glacial material. The south coast is also low and shelving, except at Richardson Island where Precambrian rocks form low, rugged hills. The eastern interior is also low and is covered with innumerable circular, shallow lakes as far westward as the head of Prince Albert Sound.

Higher hills rise in western Victoria Island. Wollaston Peninsula, north of Dolphin and Union Strait, is rugged in places in the interior. Elevations of about 1,700 feet have been reported. The hills consist of irregular ridges of unconsolidated material. Elevations decrease towards Prince Albert Sound. North of the Sound, ridge and valley topography is characteristic. The broad linear valleys trend to the northeast, and are separated by rocky ridges, sometimes with perpendicular, columnar cliffs. Altitudes are probably about 1,000 feet, but may reach 2,000 feet south of the east end of Minto Inlet. Low hills surround Minto Inlet, and in some places form prominent headlands. Inland, north of the Inlet, a generally rolling plateau is rugged in places. In northwestern Victoria Island rocky hills are cut by many ravines. Wide valleys extend east-west, and are separated by ridges with south-facing escarpments. Lakes are not as numerous in this northwestern region.

The north coast of Victoria Island is only sketchily known. High and precipitous cliffs have been reported between Collinson Inlet and Hadley Bay. A line of higher hills rises inland to about 1,500 feet. Many small rocky islands are found offshore in the bays. The northeastern corner of the Island is a newly-discovered separate large rocky island with elevations of about 1,000 feet.

Banks Island is generally high and rolling, being marked by high cliffs on both the south and north coasts. Highest elevations are found at the south where Nelson Head, the southern cape, rises a sheer 1,000 feet from the water. Rugged hills increase their altitudes inland to about 2,000 feet. The precipitous cliffs and hilly sections of the north coast rise about 600 feet above sea-level. The northern interior is rough and hilly.

The west side of Banks Island has a low flat coast. It slopes gradually inland to low rolling hills of about 1,000 feet altitude. The hills are separated by broad valleys with abundant grassy tundra vegetation. Numerous large rivers drain the interior to the west and north. The east coast is low in the central section, but is rocky and rugged towards the northeast. The northeast interior has less vegetation than central Banks Island. Several flat sandy areas have been reported there.