



## Flow patterns off Canada's west coast

Canada's west coast is influenced by the North Pacific Current and Subarctic Current, which move ocean water eastward and supply source water for the northward-flowing Alaska Current and the southward-flowing California Current. The area where these currents split — off Vancouver Island — has variable currents.

These large ocean currents are mainly driven by wind blowing across the surface of the ocean. The patterns of these currents are also influenced by the Earth's rotation, the location of land masses and the shape of the seafloor. These currents are an important part of the Earth's climate system because they transport water, heat, salt, carbon dioxide, and oxygen over long distances.

There is a summer and winter season to the atmospheric patterns off Canada's west coast. In winter, southwesterly winds generated by the Aleutian Low pressure system dominate, pushing surface waters to the north and onto the coast. The North Pacific High is the dominant pressure system in summer, bringing northwesterly winds along the coast and an upwelling of nutrients into the coastal waters.

Ocean Station Papa (located at 50°N, 145°W in a depth of 4,220 m) is an important site for continued monitoring of oceanographic information. Weather ship observations were taken at this site from 1949-1981 and oceanographic sampling has been continued by Fisheries and Oceans Canada. This station represents one of the few long-term open ocean data sets and is important in the study of ocean climate science and climate change.

