

Glaciers

Information sheet B6

In this 1914 photograph, climbers from the Alpine Club of Canada are standing in front of the Yoho Glacier, located in Yoho National Park, British Columbia.

Glaciers are formed when precipitation forms layers of snow. As snow falls, it covers previous years' snow layers. Underlying layers become compressed and compacted. Compression forces air from the snow and eventually turns bottom layers of snow into ice. This process is repeated annually, causing glaciers to grow over hundreds of years. One of the world's largest glaciers, the East Antarctic Ice Sheet, has been accumulating for so long that it is over four kilometers thick! As glaciers grow, gravity causes them to flow ever so gradually, carrying large amounts of rock and debris.

Movement of glaciers has altered many landforms in the Canadian Rocky and Selkirk Mountains. The last ice age ended 10,000 years ago. Glacier ice covered most of these mountains. As glaciers on mountains grew, they flowed into valleys. Under enormous pressure, rocks and debris at the bottom of glaciers carved land as glaciers moved, widening and rounding valleys. As the ice age ended, glaciers began to melt creating rivers and revealing newly formed valleys and landforms. Melting glaciers left lakes and steep cliffs behind. Not all of the glaciers melted, however, and many can still be seen today.

Glaciers need certain weather conditions to keep growing. Temperatures must be cold enough that more ice accumulates than is lost through melting. Most of today's glaciers are found in mountainous regions, in the Arctic and Antarctic. Over the last century, the Yoho Glacier has been slowly melting. Scientists have used a variety of methods to record changes in glaciers, including photography. Byron Harmon's glacier photographs have been used extensively to document glacial change.