

An aerial photograph showing a glacier's edge. The glacier is on the left, with a dark, rocky moraine in the center. The terrain is rugged and covered in rocks and sediment. The number '6' is in the top right corner.

# 6

# Ice on the Land

**6A Ice Sheets**

**6B Glaciers and Ice Caps**

**6C Ice and Sea-Level Change**

# Ice on the Land

This chapter covers ice masses on land: ice sheets; glaciers and ice caps; and the impact on global sea level of the melting of land ice.

**6A** The two continental ice sheets, Antarctica and Greenland, make up more than half of the total amount of fresh water and around 99 per cent of the freshwater ice on Earth. The sheer size of these gigantic ice masses results in challenges for systematic research and observation. The growth and vanishing of ice sheets relates to global processes and time scales spanning ice ages. As a consequence, the ice sheets contain snowfall from hundreds of thousands of years ago, a unique record of atmospheric and climatic evolution through several ice ages (see inside back cover). Section 6A deals with the characteristics of the two continental-scale ice sheets, observations on recent changes, and the outlook for the future of Earth's ice storehouses.

**6B** There are glaciers and ice caps in addition to those associated with the Antarctic and Greenland ice sheets, spread all

over our planet, from the poles to the tropics. Section 6B presents a global overview of these glaciers, looking at their evolution over time, recent changes, the consequences of these changes, and the outlook for the future of the world's glaciers. The final part of 6B is a world glacier tour, highlighting selected regions, mountain ranges and issues.

**6C** Continental ice sheets as well as glaciers and ice caps exert a strong influence on sea level, as ice that melts from land directly contributes to the rising sea level. Past changes in global sea level, the current situation of accelerating sea level rise, and the outlook for sea level are covered in 6C. The impacts of sea-level rise are, of course, global in nature. In this section we present information on the types and magnitude of these impacts on vulnerable regions, ecosystems and sectors of society.