

## **Block Slopes (Talus Slopes)**

Rock debris, or talus, covers the slopes of many of the Shikaribetsu lava domes. The rock fragments are large, angular, and almost uniform in size. Their size and distribution indicate that they are not the result of landslides but rather of the lava cooling process and ongoing freeze-thaw cycles.

### *When lava cools*

As lava flows out of a volcano, it cools and solidifies. This occurs at different rates within the flow: rapidly near the surface and more slowly toward the center. The cooling lava contracts, causing cracks to form in the solidifying rock, and fragments gradually break off.

### *Freeze, thaw, repeat*

Water and ice weather and erode landscapes through repeated freeze-thaw cycles. Water seeps into the cracks in rocks, expanding in volume as it freezes. This exerts tremendous pressure on the surrounding rock and forces the cracks to widen. The rocks eventually break into fragments due to repeated cycles of freezing and thawing and expansion and contraction.

### *The last ice age*

The Shikaribetsu volcanic group was very active between 60,000 and 10,000 BP, during the latter part of the last ice age (c. 115,000–11,700 BP). It is estimated that the average annual temperature would have been approximately 10°C lower than today, and the environment would have resembled that of present-day Siberia. Snow and ice would have covered Hokkaido, with glaciers extending across parts of the island. The block slopes of the Shikaribetsu volcanic group are remnants of this much colder time. Hiking either Nishi-Nupukaushinupuri (1,251 m) or Higashi-Nupukaushinupuri (1,252 m), or visiting the Senjokuzure geosite in the eastern foothills of Nishi-Nupukaushinupuri, offers views of some of these slopes.