Environmental Case Study

Melting Glaciers in Antarctica:
More Large Icebergs Calve from Antarctica’s Ice Shelves

May, 2000

Antarctica

The biggest ice chunk ever recorded broke off the Antarctic ice sheet during the Antarctic summer of 2000. The iceberg, called B-15, broke off the Ross Ice Shelf on March 23. At 183 miles long and 23 miles wide, the B-15 iceberg was as large as the Bahamas. Three other large chunks (A-43A, A-43B, and A-44) broke off in early May. The sizes of the three May icebergs, recorded by the National Ice Center on May 10, 2000, are as follows:

A-43A: 107 x 21 statute miles (168 x 33 km)
A-43B: 53 x 23 statute miles (84 x 35 km)
A-44: 41 x 20 statute miles (60 x 32 km)

Over the past several years, an unusual number of large icebergs have broken off from the Ross and Ronne Ice Shelves, the two largest ice shelves on the continent. Opinions differ on the seriousness of the loss of these ice sections in the Antarctic ice fields. Many scientists concerned with global warming believe ice losses represent early stages of warming and sea-level rise. By contrast, scientists monitoring Antarctic ice for the National Ice Center caution that the Ronne Ice Shelf is probably just returning to earlier extents, and that the shifting edge of the ice shelves is a result of normal fluctuation of temperature and precipitation. No signs of actual temperature increases have been found in this part of Antarctica. However, in other parts of the continent—especially the Antarctic Peninsula, the northernmost portion of the continent—warming and ice loss are significant and rapid. There, ecologists are concerned that warm waters are disrupting nutrient movement and food webs.

The icebergs generally break up as they move north into warmer waters, so they pose little danger to navigation.

Ice shelves and calving icebergs are monitored by the National Ice Center, National Oceanic and Atmospheric Administration (NOAA), and other agencies, using images from satellites launched to monitor weather and other conditions on the earth’s surface.

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To learn more, see these related websites:

Antarctic ice shelves, from the National Snow and Ice Data Center
The National Snow and Ice Data Center (NSIDC)
Article from CNN
University of Wisconsin's Antarctic Meteorology Research Center

To read more, see:

Environmental Science, A Global Concern, Cunningham and Saigo, 6th ed.
Climate change, pp. 384-89
Water storage in glaciers, pp. 426-29

Environmental Science, A Study of Interrelationships, Enger and Smith, 7th ed.
Antarctica, p. 30
Global warming and climate change, pp. 344-50
Global warming and environmental protection-industrial legislation, pp. 399-402