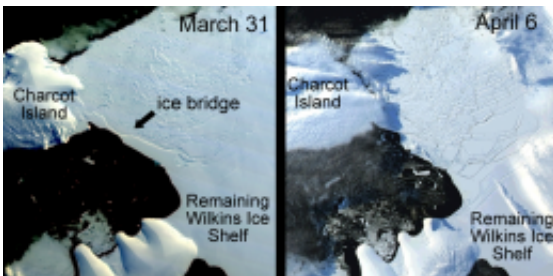


Ice Bridge Supporting Wilkins Ice Shelf Collapses

April 8 2009



This before and after image shows the collapse of the ice bridge connecting the remainder of Wilkins Ice Shelf to Charcot Island. NSIDC processed these images from the NASA Moderate Resolution Imaging Spectroradiometer (MODIS) sensor, which flies on NASA's Earth Observing System Aqua and Terra satellites. Credit: National Snow and Ice Data Center

(PhysOrg.com) -- An ice bridge connecting the Wilkins Ice Shelf on the Antarctic Peninsula to Charcot Island has disintegrated. The event continues a series of breakups that began in March 2008 on the ice shelf, and highlights the effect that climate change is having on the region.

Images from the [NASA](#) Moderate Resolution Imaging Spectroradiometer (MODIS) sensors on the Terra and Aqua satellites showed the shattering of the [ice bridge](#) between March 31, 2009 and April 6, 2009. The loss of the ice bridge, which was bracing the remaining portions of the Wilkins [ice shelf](#), will now allow a mass of broken ice and icebergs to drift into the Southern Ocean.

Scientists at NSIDC and around the world have been watching the ice bridge since last March, anticipating its collapse. Now that it has broken up, researchers are closely monitoring the remaining portion of the Wilkins Ice Shelf to see if the loss of the ice bridge allows the ice shelf to collapse further.

The Wilkins is following a pattern of instability and rapid collapse that many [Antarctic Peninsula](#) ice shelves have experienced in recent years. Scientists think that the dramatic loss of these ice shelves, which have existed for hundreds to thousands of years, is an important sign of [climate change](#) in the Southern Hemisphere. The loss of an ice shelf can also allow the glaciers that feed into it to start flowing ice into the ocean at an accelerated rate, contributing to a rise in global sea levels.

The Wilkins Ice Shelf first began to break up in the mid-1990s. Last March, the Wilkins lost another 400 square kilometers (160 square miles) in a rapid retreat, and the ice shelf continued to form new cracks over the winter.

The Wilkins Ice Shelf is located on the southwestern Antarctic Peninsula, the fastest-warming region of the Earth. In the past 50 years, the Antarctic Peninsula has warmed by 2.5 degrees Celsius (4 degrees Fahrenheit). In the early 1990s, the Wilkins Ice Shelf had a total area of 17,400 square kilometers (6,700 square miles). Events in 1998 and the early years of this decade reduced that to roughly 13,680 square kilometers (5,280 square miles). In 2008, a series of disintegrations (rapid repeated calvings in which the ice shelf pieces are small enough to topple over) and break-up events (rifting of large sections of the shelf, leading to large tabular iceberg calvings) shrunk the area of stable shelf to roughly 10,300 square kilometers (4,000 square miles), a net loss within a year of approximately 3,600 square kilometers (1,400 square miles).

Provided by University of Colorado at Boulder

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