

When glaciers reach the coast line, pieces can break off and form icebergs. Photo courtesy of kaet44, Flickr.



ICE SCULPTURES

Like mountaintops, polar regions stay cold all year long. Glaciers grow there too. They press and grind the land below as they move. When a glacier reaches a coastline, pieces of ice can break off and form icebergs.

ICE SCULPTURES



<http://beyondpenguins.nsd.org>

ABOUT THE AUTHOR



Stephen Whitt

Director of Experience Programs
Teaching and Learning COSI

Stephen Whitt has been with COSI since 1993, performing shows and demonstrations, writing exhibit signs and show scripts, and co-directing COSI's floor faculty. He has written over 40 articles for children's science magazines, and his first book, called *The Turtle and the Universe* was published by Prometheus Books in 2008.

Find this story and others at:

<http://beyondpenguins.nsd.org/information.php?topic=stories>

Issue 15: Icebergs and Glaciers (August 2009)

Copyright August 2009 - The Ohio State University

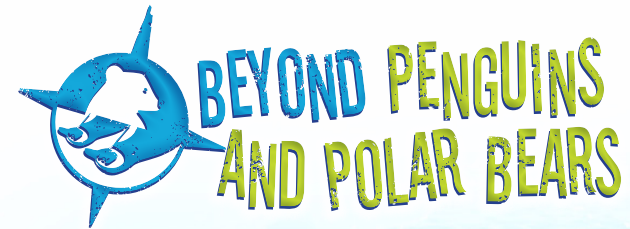


Supported by the National Science
Foundation

Licensed Under a Creative Commons license.

<http://creativecommons.org/licenses/by-sa/3.0/>

Flesch - Kincaid RL = 5.1



ICE SCULPTURES

BY STEPHEN WHITT

AUGUST 2009

Glaciers shaped the rocks in the Kalahari Desert. Photo courtesy of Martin Heigan, Flickr.



ICE SCULPTURES

ICE SCULPTURES



The Geiranger fjord in Norway.
Photo courtesy of Geir Halvorsen, Flickr.

Ice has shaped the world in surprising ways. The rugged coastline of Norway was once covered in ice. Today, **fjords** line the coast. Fjords are fingers of water that stretch inland along u-shaped valleys. Moving ice carved those valleys. The mountains of Europe and the Great Lakes of North America were also sculpted by ice. Glaciers formed giant lakes where none had been before and produced rich soil for growing crops. Even though the glaciers have retreated, we can see their sculptures all around us.

Today glaciers can be found on very high mountains. Snow falling on high mountain slopes doesn't melt. Instead the snow turns to ice and adds its own weight to the weight of ice already there. When the ice is heavy enough, the glacier begins to move down the mountain, spreading into the foothills and valleys below. As it moves, the glacier scrapes and shapes the mountain's sides.

ICE SCULPTURES

ICE SCULPTURES



On Kelleys Island in Lake Erie, the bedrock looks like something large and heavy gouged deep lines into it.
Photo courtesy of Valeehill, Flickr.

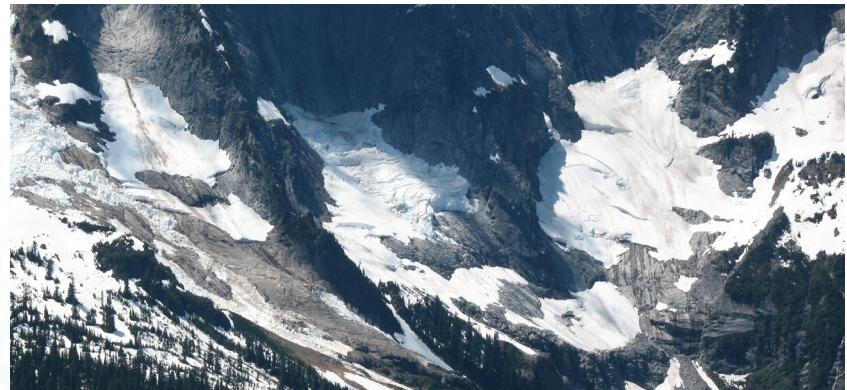
ICE SCULPTURES

ICE SCULPTURES

Today glaciers are found in only the world's coldest places. But during **ice ages**, glaciers and **ice sheets** covered the land over much of Earth. Three hundred million years ago, the Kalahari Desert was covered by glaciers. That ice slowly moved. It scraped across the rock, leaving the flat, smooth rocks behind.

ICE SCULPTURES

ICE SCULPTURES



Glaciers, as they move, scrape and shape the sides of mountains. Photo courtesy Drul, Flickr.

FLOID - a deep valley filled with water

GLACIER - a large mass of ice that slowly moves

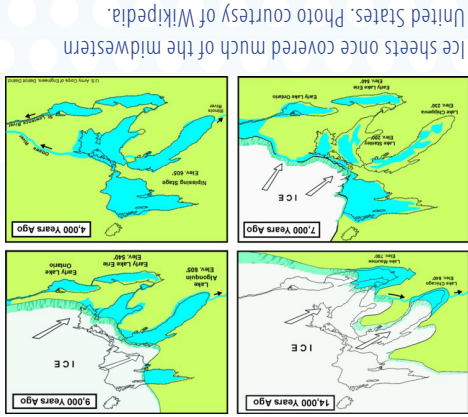
ICE AGES - times in Earth's history when the world was extremely cold

ICEBERGS - large pieces of ice that float in the sea

ICE SHEET - a mass of ice that covers more than 19,000 square miles of land

In the Kalahari Desert of South Africa are some odd-looking rocks. The rocks are flat and polished, as if something very large and heavy has scraped across their surface.

Halfway across the world, in the southwest corner of Lake Erie, is Kelleys Island. The bedrock there is grooved. It looks as if something large and heavy has moved across the rock, gouging out these deep lines.



Ice sheets once covered much of the midwestern United States. Photo courtesy of Wikipedia.

Glaciers left grooves in rocks. Photo courtesy of Valiehill, Flickr.



ICE SCULPTURES

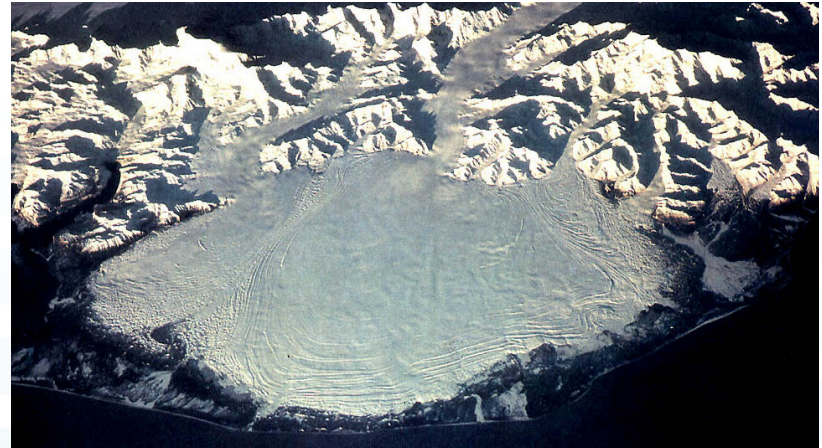
ICE SCULPTURES

Starting around three million years ago, an ice sheet covered much of the midwestern United States. This ice sheet advanced and retreated many times. It retreated for the last time around fourteen thousand years ago. This ice sheet is responsible for the glacial grooves of Kelleys Island. As the glacier moved, it picked up heavy boulders and pushed them along. These boulders, some made of hard rock, scraped at the softer limestone of Kelleys Island, forming long channels. These channels are the glacial grooves of today. They are clear evidence of the wall of ice that once moved across the land.

What caused these strange things? The flat, polished rocks of South Africa and the grooved rocks of Kelleys Island were left behind by giant moving walls of ice called **glaciers**. Glaciers are made of ice. Ice is a solid. But glaciers are so large and heavy that they actually move like a liquid. You can think of glaciers as slow-moving rivers of ice.

ICE SCULPTURES

ICE SCULPTURES



The Malaspina Glacier in Alaska. Photo courtesy of Image Science and Analysis Laboratory, NASA-Johnson Space Center.