



TOPIC: GREENLAND IN NEW YORK? HOW CAN THAT BE?

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GENERAL BACKGROUND INFORMATION ON THE SUBJECT:

Glacial environment in New York State since the last glacial maximum (approx. 20,000 years ago) was very similar to the modern glacial environment in Greenland. While glacial processes in Greenland are still active, New York State contains only geological evidences of these processes expressed in landforms and structures of sedimentary deposits. To visualize the origin of these deposits and their environment we filmed variety of modern glacial environments in Greenland and made a parallel between them and ancient glacial deposits in New York State. This parallel between active and ancient features helps students during their field trips to understand better geological evidence of the former glacial environments in New York State.

TERMS YOU SHOULD KNOW (VOCABULARY):

Arctic desert; Braided streams; Calving; Catabatic winds; Crevasses; Cross-bedding; Dunes; Erratics; Fluvial deposits; Glacial landforms; Graded bedding; Ice sheet; Icebergs; Moraines; Striations; Till; Wind erosion;

WHY ARE WE STUDYING THIS IN THE POLAR REGIONS?

We study glacial environments in polar regions because this is the only way to see them in action and learn from their behavior how to interpret buried ancient environments left to us by similar processes that took place thousands years ago. For example, ice melting and retreat in Greenland provides a unique opportunity to see geological features formed by these processes and identify them in now buried deposits of New York State.

HOW DOES THIS AFFECT US HERE IN THE UNITED STATES?

In USA we have quite large number of glacial landforms such as remnants of moraines and glacial till; there are also deposits left by ancient glacial lakes and rivers. These deposits play important role as aquifers, building foundations or construction materials.

Water yield from aquifers, stability of buildings or qualities of sand and gravel mixes have direct connection to the texture and structure of glacial deposits and their ancient environmental conditions. Therefore geologists need to know these conditions to provide viable economical solutions and advices to the industry or governmental agencies.

TO LEARN MORE ABOUT THIS TOPIC:

1. Story of Glaciers and the Ice Age. W. H. Matthews. New York: Harvey House, 1974.
2. After The Ice Age: The Return of Life to Glaciated North America. E.C. Pielou. University of Chicago Press, 1992.

ACTIVITY YOU CAN TRY:

Go to the web site:

http://www.uwsp.edu/geo/faculty/lemke/alpine_glacial_glossary/exercise/exercise.html

Look at the GLOSSARY first, identify photos with topographic maps. Go thoroughly through images and all terms. Answer questions.