

Lesson – Erosion by Glaciers

THE FOLLOWING VIDEO HAS BEEN APPROVED FOR  
**ALL AUDIENCES**  
BY THE EARTH SCIENCE TEACHERS ASSOCIATION OF AMERICA , INC

THE VIDEO HAS BEEN RATED

1	INTELLIGENT UNDER 15 REQUIRES TEACHER ASSISTANCE
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STRONG EARTH SCIENCE LANGUAGE, DETAILED DIAGRAMS, AND SUPER AWESOMENESS.

- I can define what a glacier is & describe how they move
- I can describe different glacial features that form

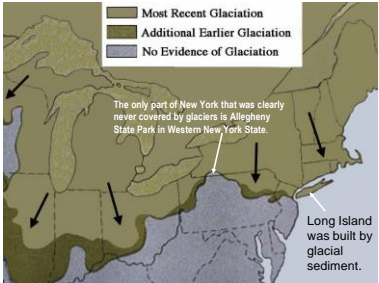
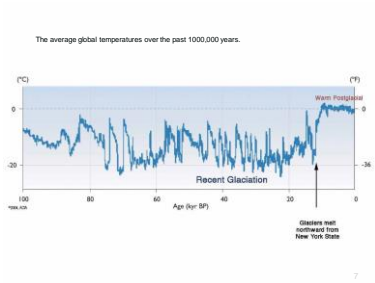


**GLACIAL EROSION**

**GLACIER**

- When the snow doesn't melt you get a glacier
- Mass of ice & snow that moves downhill on land under the influence of **GRAVITY**

Margerie Glacier in Alaska





More snow & ice accumulates = Glacier Advances  
 Less snow & ice accumulates = Glacier Retreats

Glacial movement is by PLASTIC FLOW (Acts like FLUID)

Movement is fastest in the middle & top where there is less FRICTION

Birdseye view showing greatest speed is in the middle of the glacier

Glacier

Bedrock

Gravity pulls the ice downhill  
 The ice drags along the bedrock and pushes all the soil.

Glacier Time-Lapse Movies  
<http://www.kit.edu/glaciers/askach/index-en.html>  
<http://swisseduc.ch/glaciers/aletsch-livacam/index-en.html>

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### Types & Features of Glacial Erosion

Till - Extremely Unsorted Sediments

Striations - scratches on bedrock that show the direction the glacier was moving

Forms U-shaped valleys

### FINGER LAKES

GLACIAL CARVED

NASA

### MORaine

Formed when a glacier stops moving - Unsorted sediment deposited directly from the edge or bottom of a glacier

The Ronkokoma Moraine dips below sea level at Montauk Point. This is New York's most eastern landfall. Note the boulders washed out of the moraine.

**OUTWASH PLAINS**

- Rock material deposited by the meltwater of a glacier which form a broad plain beyond a moraine.

Outwash plain in front of Thompson Glacier, Axel Heiberg Island, Canadian Arctic



**THE FORMATION OF LONG ISLAND**

By Charles Barrows

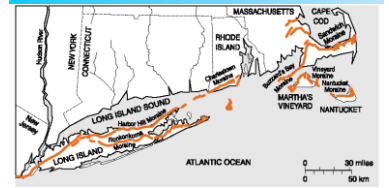
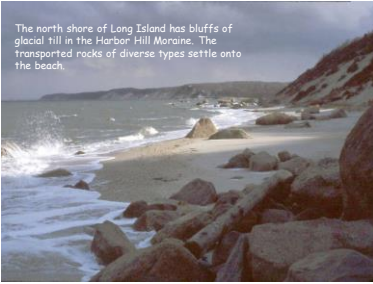
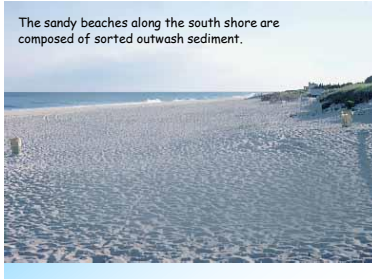


Figure 14-7 Long Island was built from sediment pushed into place by glaciers. Most rock-strewn, north shore beaches lie at the bottom of the high bluffs of the Harbor Hill Moraine. South shore beaches are composed of mostly fine sand washed from the moraines by glacial meltwater. These moraines extend into southern New England.

The north shore of Long Island has bluffs of glacial till in the Harbor Hill Moraine. The transported rocks of diverse types settle onto the beach.



The sandy beaches along the south shore are composed of sorted outwash sediment.



**KETTLE LAKES**

-Formed when a large block of ice buried in glacial sediments melts



Lake Ronkonkoma - largest of 8 kettle lakes located on Long Island

**Erratic**

- a boulder transported and deposited by a glacier that is a different type of rock than the bedrock upon which it is sitting

Central Park



