

Erosion & Deposition by Glaciers



Glacier

Any large mass of ice that moves slowly over land

They form in areas where more snow falls than melts.

What are 2 types of
glaciers?

Continental Glaciers
Valley Glaciers

Continental Glaciers

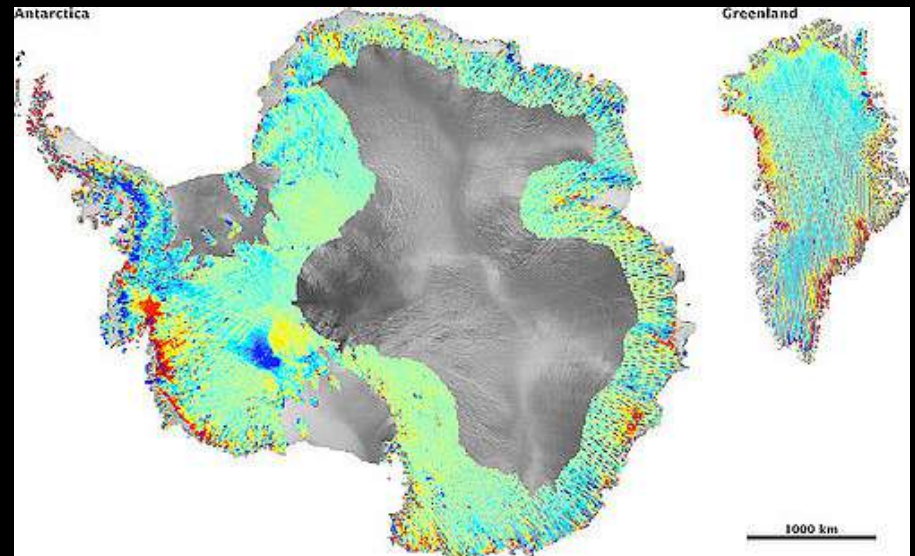
Cover **land or continents**

Spreads out over millions of square kilometers

Covers 10% of Earth's land

Found in Greenland and Antarctica

Covered larger parts of Earth (Ice Ages)



Continental Glaciers



Valley Glaciers

Forms high in **mountains** when snow and ice builds up in a mountain valley

Stay narrow and long

Held in by sides of the mountain

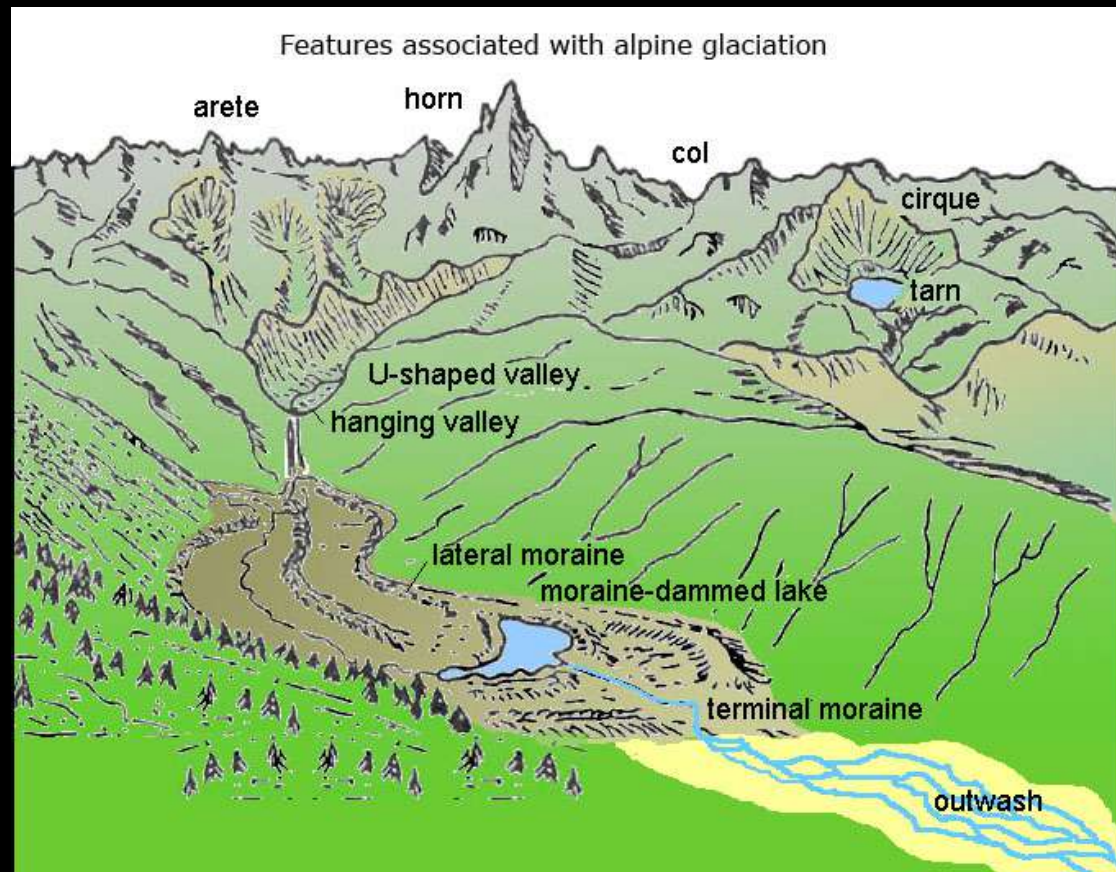
Smaller than Continental glaciers

Form U-shape valleys



Valley Glaciers

(aka Alpine Glaciers)



BOTH Continental & Valley Glaciers

Large masses of ice

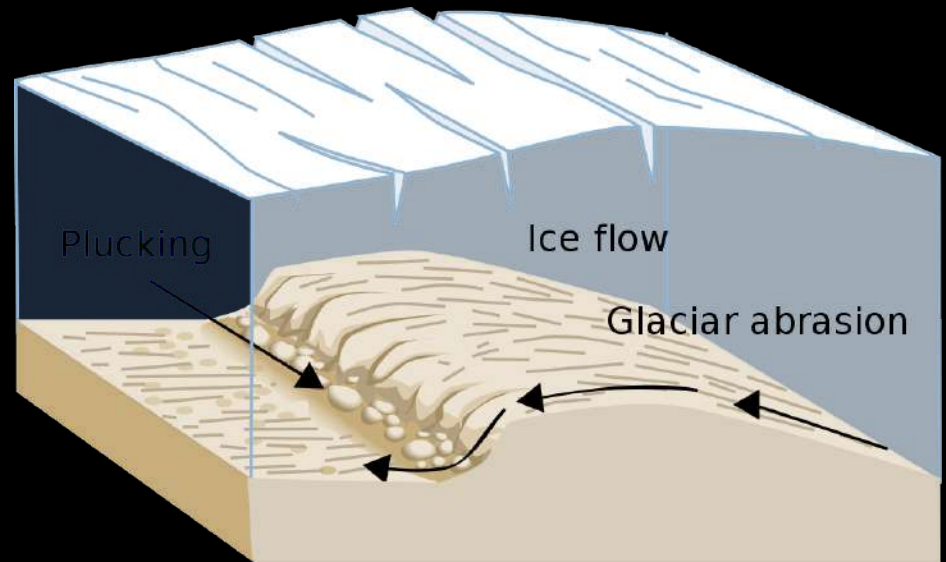
Move slowly on land

Shape the land

How do glaciers shape the land?

Plucking
Abrasion

Plucking



As glaciers move across the land, they Pick up **rocks**. The weight of the glacier breaks them apart & they freeze to the **bottom** of the glacier.

Carries rock fragments along with it.



Abrasion

Glaciers drag the rock along.



The land is gouged & scratched by the rocks.

Deposits & Formations made by Glaciers:

Till

Moraine

Kettle

Till

Glaciers make deposits along the land
as they melt and drop the sediments
from the bottom side

Clay

Silt

Sand

Gravel

Boulders



Moraine

Till deposits along the edge of glacier form a ridge

EX: Long Island in NY is a terminal moraine – the last of the glacial till was dropped here



When glaciers melt they leave marks

Small depressions left in areas when chunks of ice are left in glacial till.

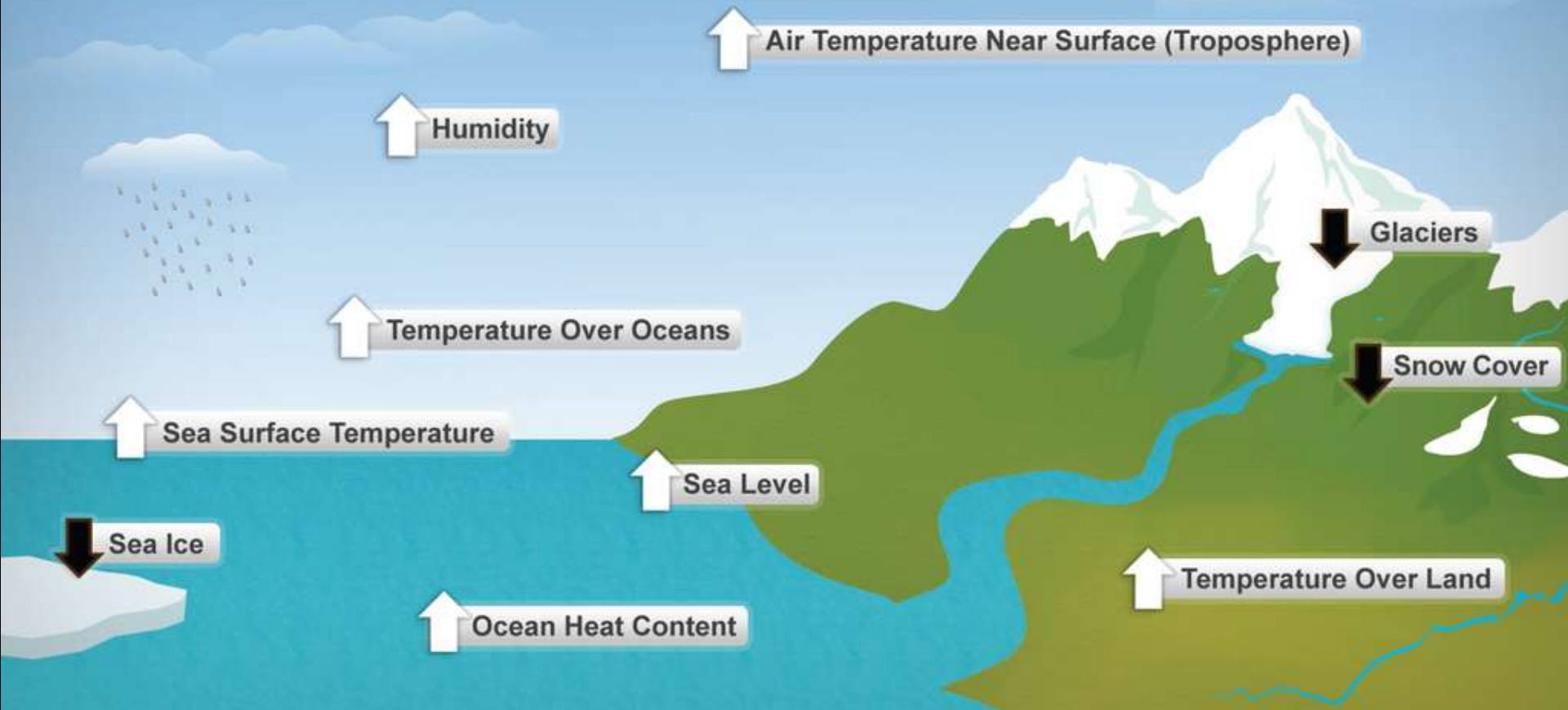
They fill in with water and form **ponds or lakes**

Common in Minnesota that was once covered in ice

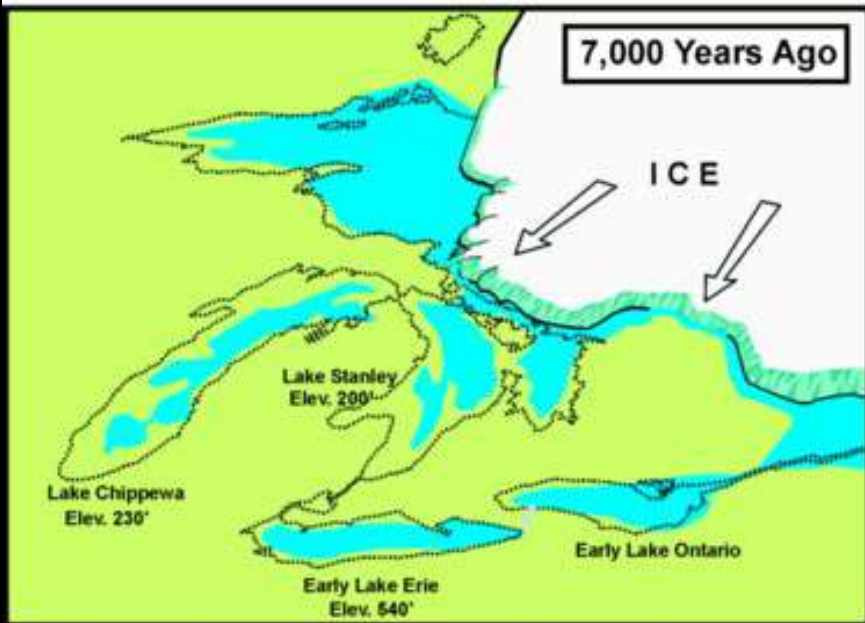
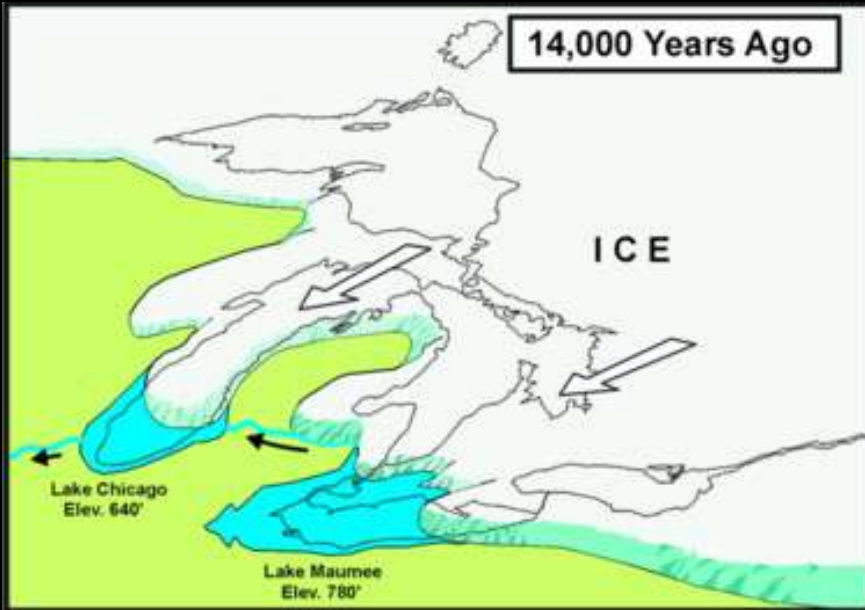
Kettles



Ten Indicators of a Warming World



How can changes in glaciers provide *evidence* that our planet is warming up?



U.S. Army Corps of Engineers, Detroit District

The Great Lakes

Summary Questions:

1. What weather condition is needed for a glacier to form?
2. How does a glacier move?
3. Why does the snow that forms a glacier change to ice?