

Contents

Characteristics of a Glacier	1
Glaciers in the Landscape	1
Types of Glaciers	1
Valley	1
Ice Sheet	1
Piedmont	1
Locations	2
How snow accumulate	2
Glacier Erosion	2
Deposits of Glacial Origins	2
Features Formed by Glacial Erosion	2
Landscape Features of Continental Ice Sheets	2
Axis of Rotation	2
Shorelines	3
Characteristics	3
What are tides	3
Waves	3

Characteristics of a Glacier

- slow moving river
- moves rocks
- erosion and transport
- works its way down
- can merge together
- does not have to be in the mountains but has to be really cold and enough precipitation

Glaciers in the Landscape

- cracks (crevasses) due to flow
- lower parts typically blue ice
- Fed by ice sheets or snowfields
- carry rocks, especially along margins

Types of Glaciers

Valley

- carve out and reshape the landscape

Ice Sheet

Dunno what to put here

Piedmont

- sit on top of the mountain

Locations

- Antarctica
- New Zealand
- Iceland

How snow accumulate

- since the material does not melt, there is continually compacted with layers upon layers
- glaciers form where accumulation of snow and ice exceeds loss
- glaciers lose ice and snow by melting, wind erosion and sublimation
- equilibrium line: that divides the zone of ablation from the accumulation zone
- always dragging down the valley
 - cycle repeats itself

Glacier Erosion

- Carries rock and other debris that can erode underlying materials
- abrade and smooth off bedrock in the way
- pluck rocks from down-flow side
- striations (direction of movement of the glacier)

Deposits of Glacial Origins

- Moraine (large pile of dirt, bulldozer went through and went home)
- Outwash
- Till (big clay ridge)
- Glacialfluvial Deposits

Features Formed by Glacial Erosion

- Cirques
- Aretes
- U-Shaped Valley
- Fjord (tied to oceans)
- Hanging Valley

Landscape Features of Continental Ice Sheets

- Kettle lakes (stick ice in a sand hole and cover it. What do you end up with?)
- Esker (river like)
- Drumlins

add graphic here

Axis of Rotation

- More tilt: $\phi = 24.5$
- Present tilt: $\phi = 25$

Shorelines

- Where water meets land
- Less water in the glaciers, more water in the ocean

Characteristics

- Low tide
- High tide
- Waves
- Wind

What are tides

- Pull of the moon
- there is a bulge when being pulled by the moon
- California has four tides and Florida has two

Waves

- response of energy going through the water
- not going anywhere
- wave base = $\frac{\Delta_{crest}}{2} = \frac{crest_f - crest_i}{2}$