

Hunter College of the City University of New York
Department of Geography
Postcards from America

Glacial Dynamics

1. **Ice sheets** move away from their **zones of accumulation** and move down slope under the pressure from their weight (called **plastic flow**) in sections (called **lobes**).
2. Ice sheets also move down slope by **slippage** as the weight of the ice melts its lowest levels and acts as a lubricant.
3. The forward edge of the ice sheet (called the **ice front**) acts as a *bulldozer or snow plow*, scouring the land, plucking loose rocks out of the ground and slicing all vegetation in its way.
4. All this scoured and plucked material (called **debris**) is mixed with the ice and moved forward and down slope with the glacial.
5. **Moraines** (unsorted glacial debris) are created as the ice redistributes the material.
6. The furthest advance of the ice front is marked by the **terminal or end moraine**, a high ridge of glacial material that was pushed in front of the ice.
7. The “**retreat**” of a glacier is the melting of the ice front *in place*, creating the illusion that the glacier is moving backward.
8. A **variety of glacial features is created** as the **ice melts in place** and the material it picked up is exposed and dropped.
9. A **recessional moraine** is a low ridge of unsorted glacial material marking the ice front’s advancement after a period of retreat (a secondary or tertiary forward movement but not as far as the furthest forward movement.)
10. **Outwash** is the water created as the ice melts. It flows away from the glacier and **carries debris** which is now **sorted** by the moving water and deposited in front of the recessional and terminal moraines. The heaviest/largest pieces are dropped first; the lightest/finest pieces are carried far away.
11. An **outwash plain** is a landform feature created by the outwash. It contains a variety of glacial features. It is thickest closest to the source of meltwater and is thinnest the farthest away from the ice front.

GLACIAL TERMINOLOGY

1. Glacier _____
 - a. continental glacier _____
 - b. ice sheet _____
 - c. lobe _____
2. Glacial drift _____
3. Moraine _____
 - a. ground moraine _____
 - b. recessional moraine _____
 - c. terminal moraine _____
4. Erratic _____
5. Drumlin _____
6. Kame _____
7. Esker _____
8. Kettle _____
9. Glacial lake _____
10. Mountain (alpine) glacier _____
 - a. cirque _____
 - b. arête _____
 - c. lateral moraine _____
 - d. medial moraine _____
 - e. U-shaped valley _____
 - f. hanging valley _____
11. Outwash _____
12. Outwash plain _____