Glaciers

ESC 115 Physical Geology

Estimating Rates of Melting

Group Members:_____

Familiarize yourself with the terms horn, drift, zone of accumulation, zone of ablation, terminus, plucking, alpine glaciation, continental glaciation, U-shaped valley, V-shaped valley, moraine, and crevasse. You can find these in your book or online.

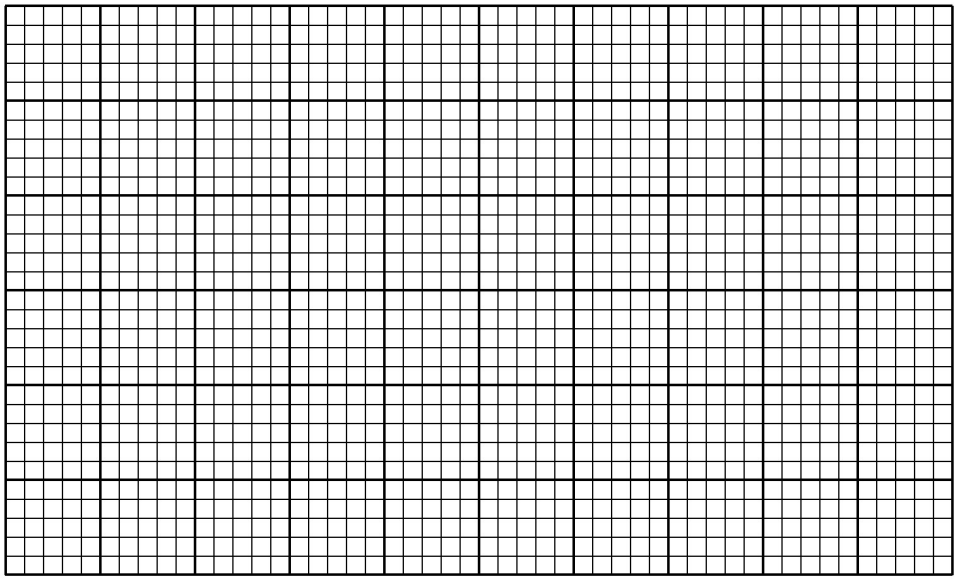
We will be working in class with a map of the Grinnell Glacier, originally from *Johnson, Arthur (1980). Grinnell and Sperry glaciers, Glacier National Park, Montana, a record of vanishing ice, USGS Professional Paper 1180,* and annotated at

`http://serc.carleton.edu/quantskills/activities/glacial_retreat.html`

1 In-Lab Assignment

We will begin this lab by identifying together major glacial features of the upper Midwest using anaglyph maps that I will hand out in class. Then we will undertake the following exercise:

- On the map that I will provide you, note the outline of the extent of the Grinnell Glacier in 1850. This is the first part of approximating the area of the glacier.
- Count the number of squares on your tracing paper covered or partially covered by the glacier.
- Repeat this for 1937, 1968, and 1993.
- On the graph below plot the number of squares versus the year of the measurement.
- Based on the trend you observe, approximately when will the glacier melt completely (area= 0)? _____



2 Outside of lab

The purpose of this section of the lab is to familiarize you with the local impact of glaciation. Read about Iowa's glaciers at `http://www.igsb.uiowa.edu/Browse/glatrail/glatrail.htm`

Then answer these questions to turn in at the beginning of lab next week:

1. What is the Des Moines lobe?

2. What is a kettlehole? Name one in Iowa.

3. What is a kame? Name one in Iowa.

4. What is an esker? Name one in Iowa.