

Glacial Geology Lab adapted from A.N. Strahler

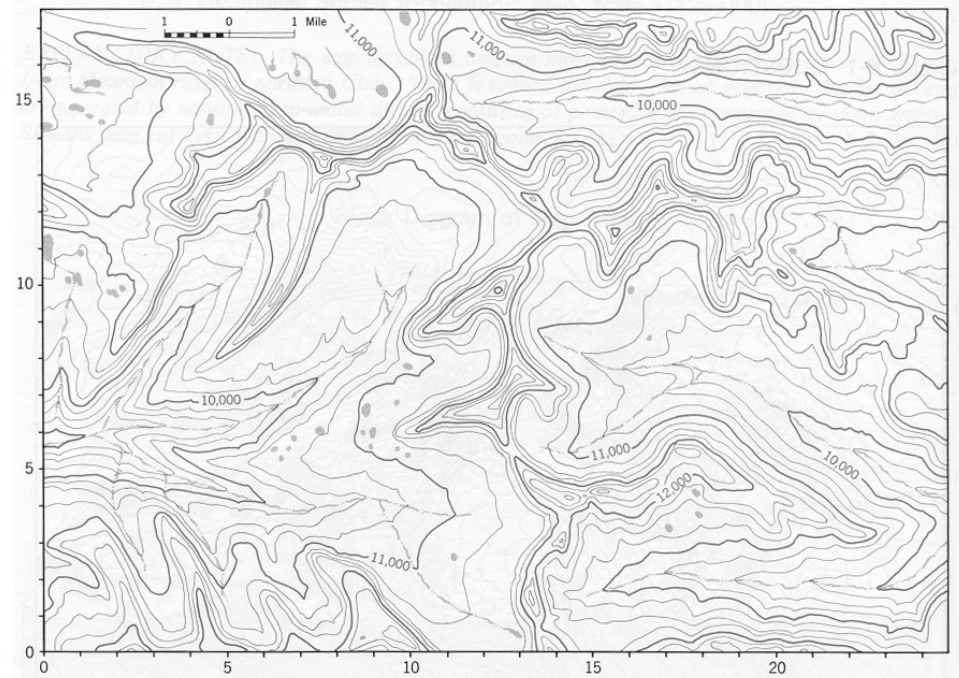
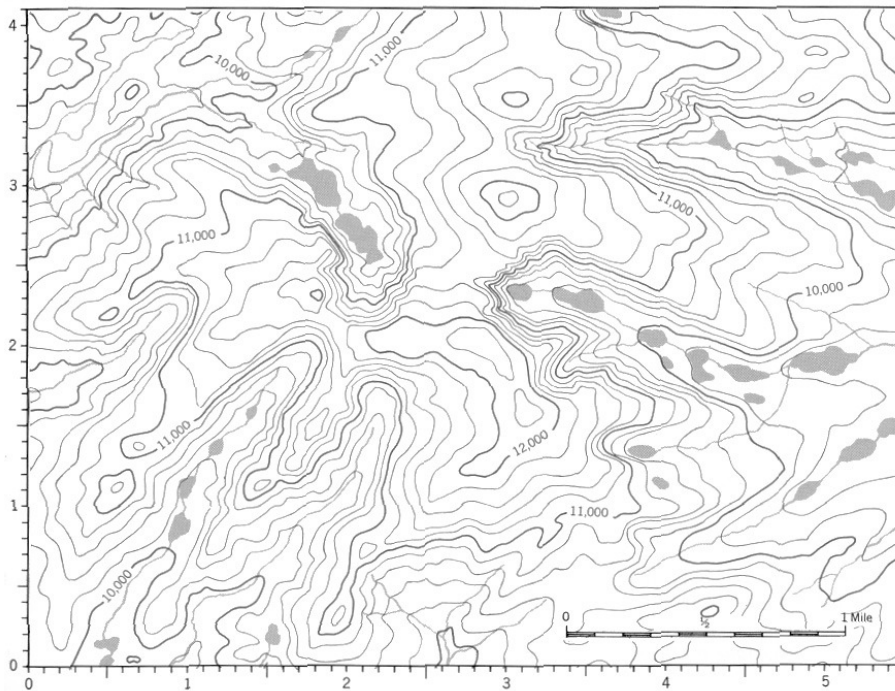
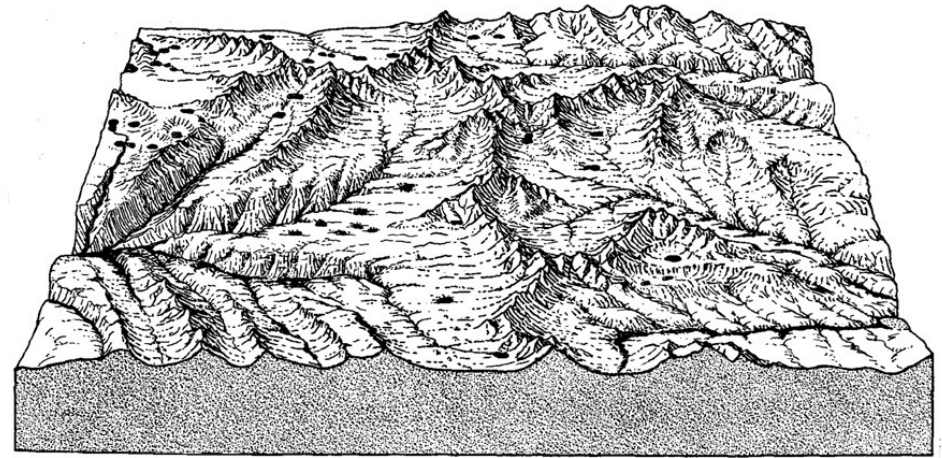
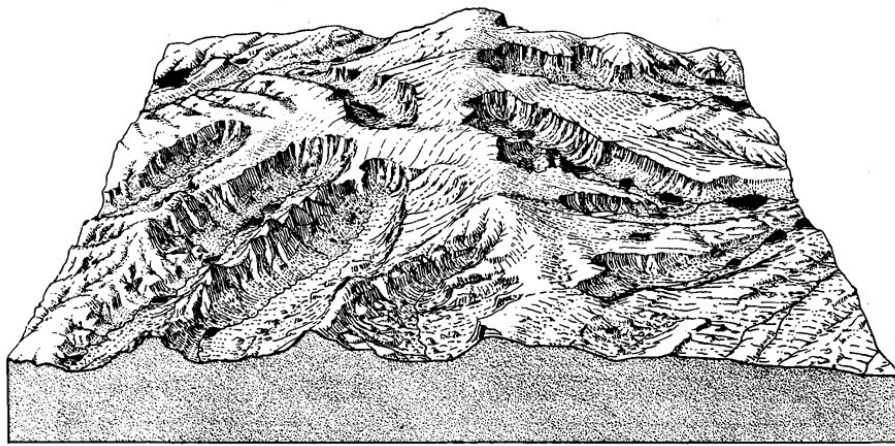


FIGURE 1 - Steep-walled cirques have been cut into the broadly rounded summits of the Big Horn range in northern Wyoming, but much of the preglacial surface remains. The cirques contain lakes which form chainlike groups extending down the glacial troughs which lead from the cirques.

FIGURE 2 - Broad, relatively flat-floored cirques are separated by narrow, steep-walled divides consisting of pointed horns and sharp aretes in the Uinta Mts of northern Utah. Streams have cut deep V-shaped canyons into the cirque mouths.

FIGURE 1 -

1. Determine the contour interval of this map _____
2. Using a ruler and the scale of the map, determine the fractional scale of the map
1: _____
3. What is the depth of the cirque located at 3.1-2.3, measured from the lake to the point on the upland at 2.9-2.0
_____ ft.
4. Draw the main divide of the mountain range.
5. Consider prevailing winds, gradients, path of the sun, and anything else that might have an impact to explain why the cirques on the eastern side of the range have eroded back closer to the divide than those to the west of the divide.

6. Use a colored pencil to lay out a route for a trail from 5.5-2.3 to 0.0-1.5 in such a way that the gradient nowhere exceeds 1600 ft./mi. Avoid the cirques and troughs.

FIGURE 2-

1. Construct a profile of this area from 14.0-17.5 to 2.0-0.0 and attach it to the bottom of this page. Keep the y-axis of your profile less than 6 cm high. Neatly label any glacial features you can identify.
2. On the map, label at least 3 *cirques*, 4 *horn peaks*, 3 *arettes*, and 4 *cols*.
3. Use a warm color to lightly shade the areas on the map that have been modified by stream erosion since the ice has melted.
4. Use a cool color to lightly shade the areas on the map that were likely to have been covered by ice during the glacial maximum. Draw several arrows to indicate the direction of ice flow.
5. Use a dark color to draw in the medial moraines that probably existed in the glaciers.