

Glacier National Park Virtual Field Trip

Stop 3 - Sperry Glacier: Activity 2

1. According to Carrara & McGimsey (1988) moraines of the older group have soils that contain ash from Mt. Mazama (now Crater Lake). Mount Mazama erupted about 6850 years ago. What does this tell us about the age of the older moraines?
2. Moraines of the younger group are not covered with soil, contain no volcanic ash, and generally lack vegetation (Carrara & McGimsey, 1988). What does this tell us about the age of these moraines?
3. Examine the Sperry Glacier Moraine Map. This map shows several moraine crests belonging to the younger group. What do these successive moraine crests tell us about the behavior of the Sperry Glacier with regards to mass balance?
4. The Sperry Glacier Moraine Map shows more moraine crests than the 1:24,000 topographic map (both of these maps should be open in separate windows).
 - a. Why do you think the topographic map doesn't show all the moraine crests?

- b. Gaps exist in the moraines (or crests) shown on both maps (topographic and moraines). Do you think these gaps were always there? If so, why, and if not, why not?

5.
 - a. What type of glacial landform does the bedrock here show?

 - b. How were these features created?

 - c. Are these features revealed in the shape of the contour lines on the 1:24,000 topographic map? If so, how does the map show them, and if not, why doesn't the map show them?

6. Did Sperry Glacier ever extend down valley past Avalanche Lake? What evidence did you use to make this decision? Be specific. You may want to refer to the surficial deposits map shown in the table above or the 1:100,000 topographic map.