



Instructions: Answer the questions below.

1. What is the Continental Divide? How is it related to the Yellowstone Hot Spot?
2. Approximately when did the Snake River Plain begin to develop? Where was the Hot Spot?
3. About how fast is the Hot Spot migrating? In what direction?
4. What tectonic plate is moving over the Hot Spot? In what direction?
5. What is a rhyolitic caldera?
6. Where are East, Middle and Big Southern Buttes located? What are they?
7. About how frequently does the Hot Spot erupt? Where is the last place the Hot Spot erupted? Where is it today? Could it erupt again? When is this most likely to occur and where? Use the *geologic map of eastern Idaho*. This map can be accessed by going to *Rocks, Rails, and Trails* (Chapter 2) in the Geology of SE Idaho which is located in the geology section. Answer the following:

8. Find Qyr on the geologic map. What does it stand for? How old are the Qyr rocks? Rhyolite is a light-colored volcanic rock with a chemical composition high in silicon. Because rhyolite is very viscous, a rhyolite eruption is usually a huge explosion of red hot ash that blasts over the surface of the land, smothering, burning and destroying everything in its path. Rhyolite erupts from resurgent calderas and volcanic fields. Idaho was the site of many such eruptions, shown on the Yellowstone hot spot map. Shield volcanoes erupting basalt followed caldera eruptions.

9. Basalt is the dark blocky lava seen on the Snake River Plain, and at Craters of the Moon. Despite the huge volume of the rhyolite eruptions, rhyolite is usually seen on the mountain ranges at the edge of the Snake River Plain. Basalt covers the rhyolite on the Snake River Plain. Notice the ages of the rhyolite calderas and volcanic fields (Ma stands for mega anna, Latin for million years). Where is the oldest volcanic field and how old is it? Where is the youngest volcanic field and how old is it?

10. Using the scale on the hot spot map, make a rough estimate of the distance from McDermitt to Yellowstone. How fast is the hot spot moving?