Volcanism in Eastern Oregon

Deep Mantle Plume? Upper Mantle Plume? Back-arc Basin? Something Else?

Three ways to melt the mantle

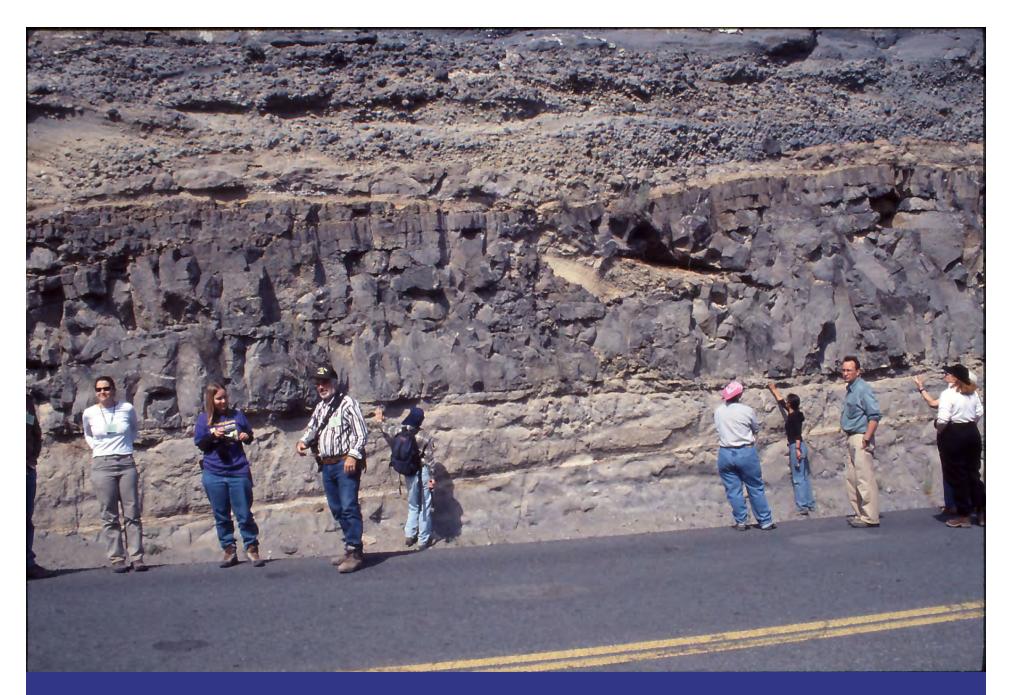
- Add water
- Add heat
- Reduce pressure



6 Ma Basalt flows Cove Palisades, Madras, Oregon



Cove Palisades Intra-Canyon Flow



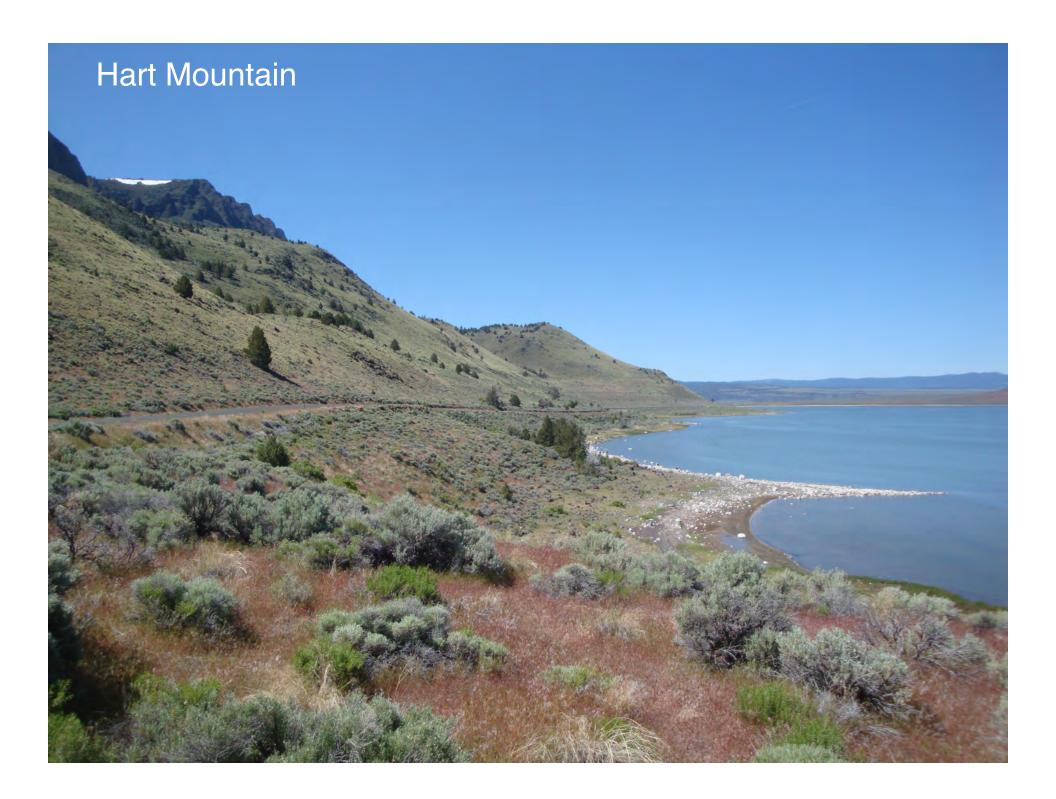
Base of lower sequence, Cove Palisades



Smith Rocks State Park: ignimbrite flows & intrusive necks

John Day Formation in foreground, Rattlesnake Tuff on ridge

Picture Gorge Basalts, John Day River



West flank, Steens Mountain



Faulted east flank, Steens Mountain





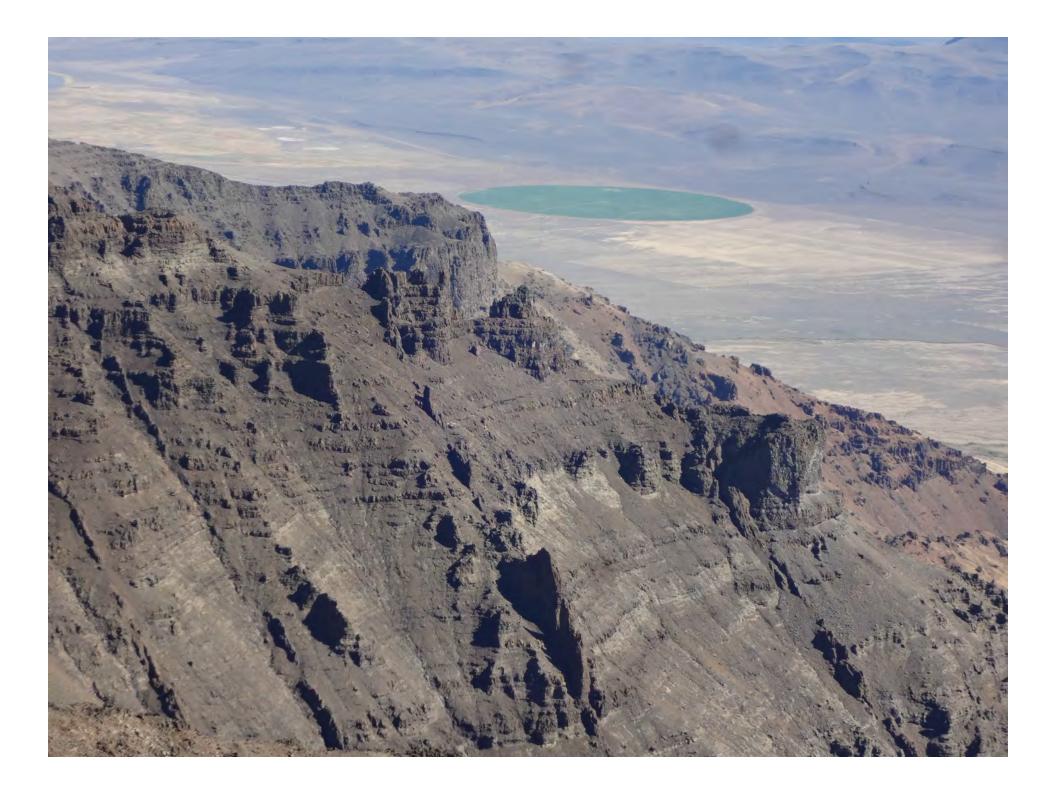




RATTLESNAKES MAY BE FOUND IN THIS AREA.

THEY ARE IMPORTANT MEMBERS OF THE NATURAL COMMUNITY. THEY WILL NOT ATTACK, BUT IF DISTURBED OR CORNERED, THEY WILL DEFEND THEMSELVES.

GIVE THEM DISTANCE AND RESPECT.



Steens Mountain summit outcrop



Steens Mountain summit outcrop



Wildhorse Canyon, Steens Mountain

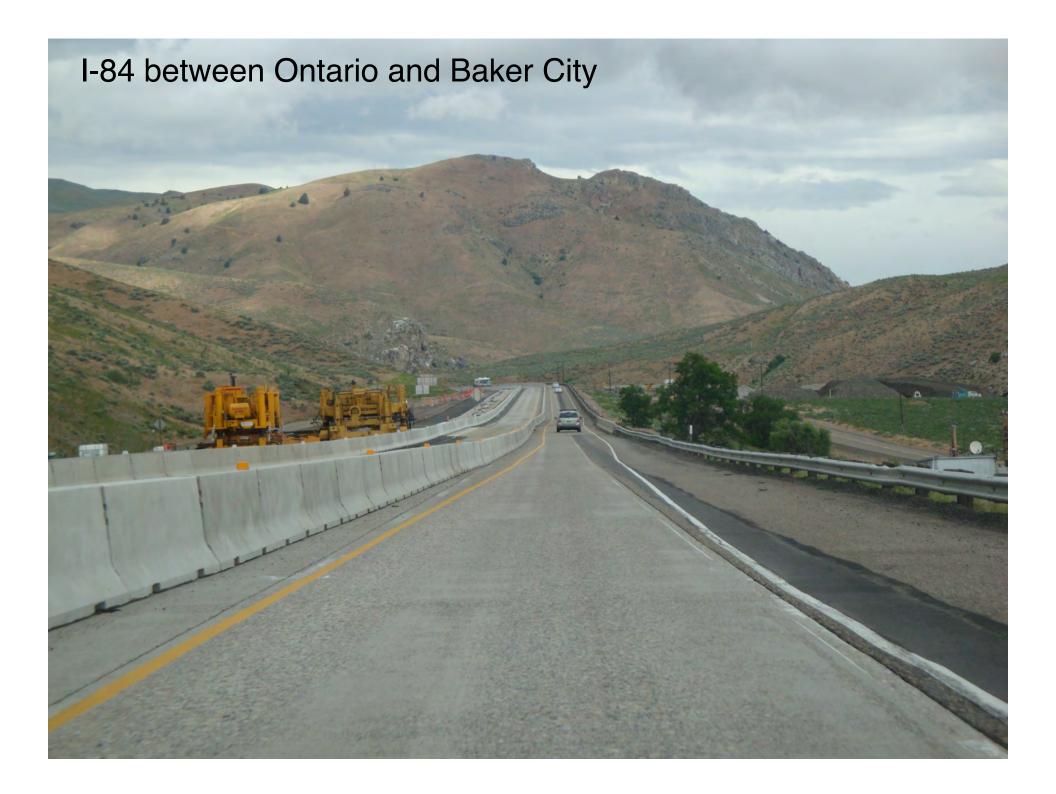


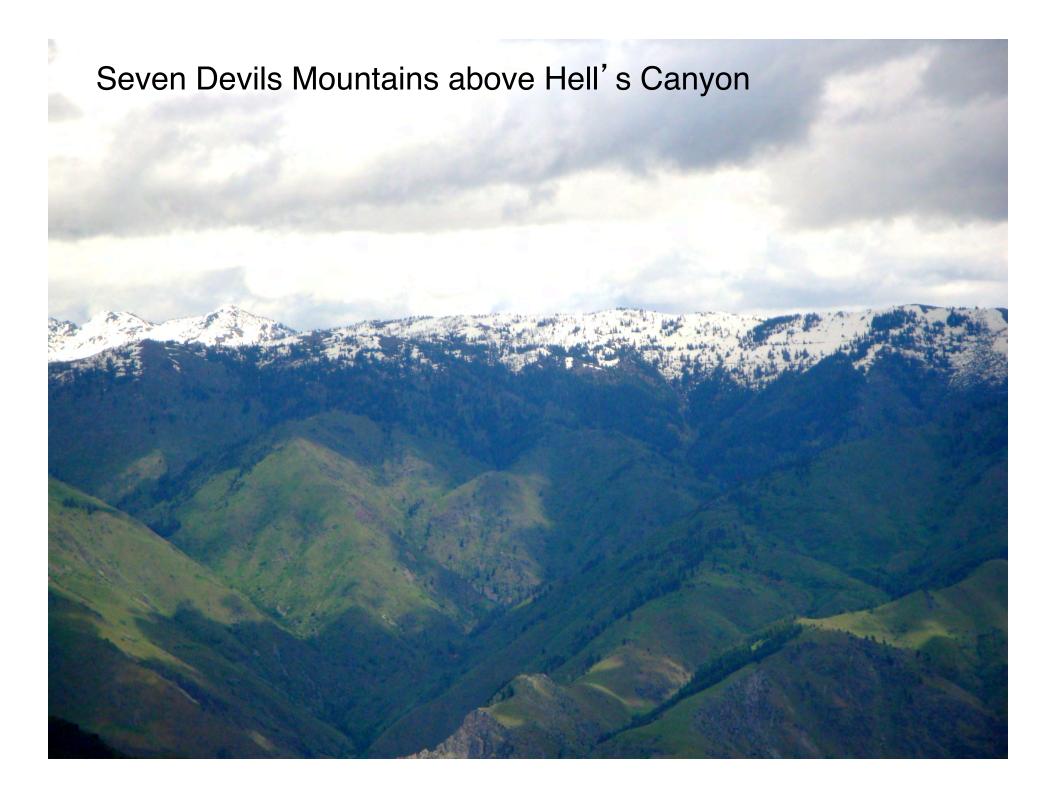


http://www.blm.gov/or/districts/burns/recreation/images/steens-kiger.jpg

Oregon-Idaho Graben, near Juntura, OR







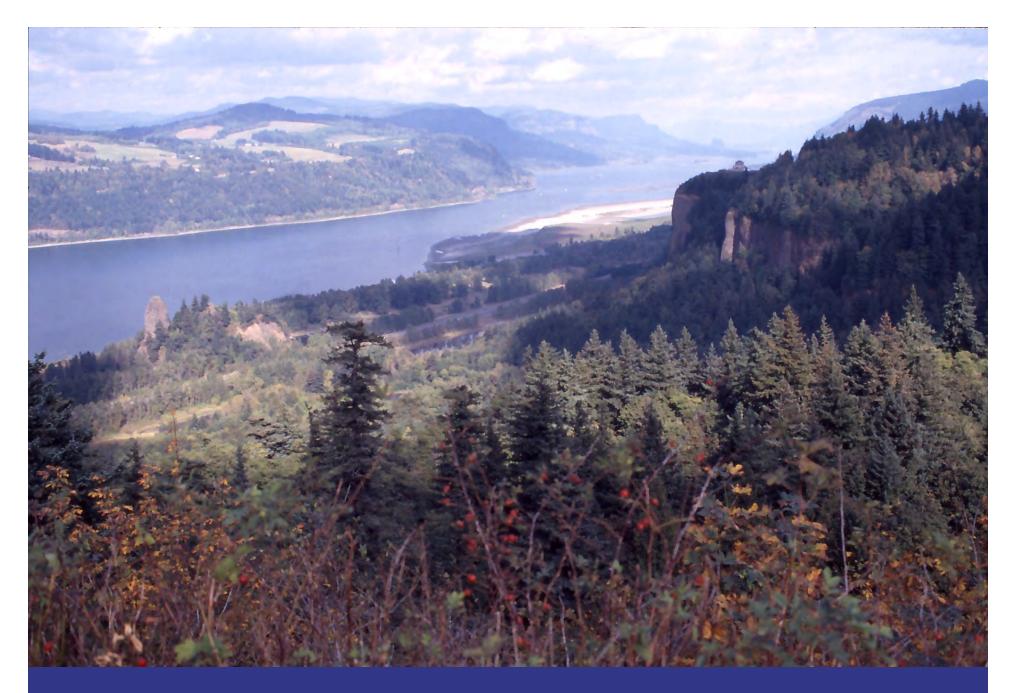




CRB Dikes in Wallowa Granite







Crown Point, Columbia River Gorge

