

## Battle of Lava and Life Summer Session 2009

### General trip route

This trip was run from Spokane, WA to Bend, OR and Newberry Volcano National Monument and then to Crater Lake National Park via Fort Rock. We returned to Spokane with the intention of stopping along McKenzie Pass to hike to a volcanic vent. The road was closed so we opted to do a hike along the Metolius River instead.

### Physiographic provinces and areas covered

Columbia Plateau

Cascade Mountains

High Lava Plains

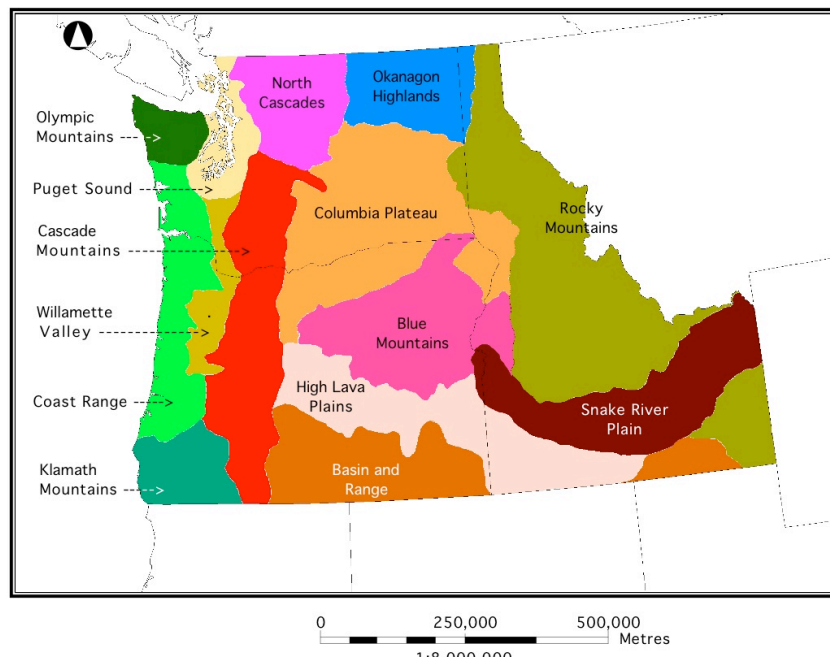
### Geology of the Pacific Northwest Physiographic Provinces

Cartography by Frank D. Granshaw  
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**Note:**  
Boundaries are approximate

#### Reference

Rosenfeld, C., 1985, Landforms and Geology, in *Atlas of the Pacific Northwest*, Kimerling, A.J. and Jackson, P.L., p. 40



### **Suggested geology topics for discussion during trip**

- Physiographic provinces of Washington State and Oregon
- Columbia River flood basalts
- Channeled Scablands
- Caldera formation
- Geology of the High Lava Plains
- Lava tube formation
- Volcanic edifices and eruptive styles
- Lava types and properties
- Bimodal volcanism
- Geothermal energy
- Glaciation in Newberry and Crater Lake areas
- Pluvial lakes in the Fort Rock area
- Crater Lake bathymetry
- Geologic history of Newberry and Crater Lake areas
- Magma properties (e.g., viscosity)
- Phreatic vs. phreatomagmatic eruptions
- Maars, tuff cones and tuff rings
- Pyroclastic rock classification

**Columbia Plateau** – Outcrops of columnar jointed basalt and pillow lavas are abundant in the area.

**Mountain Identifier** – a worthwhile stop

**Lava Lands Visitors Center** – Lava Butte cinder cone trail

**Deschutes River** - hike to Benham Falls

**Newberry Volcano National Monument** - suggested stops

- Big Obsidian Flow hike
- Paulina Peak – drive to the top to discuss the evolution and landforms of Newberry Volcano
- Lava Cast Trail (these are really tree molds)
- Paulina Falls

### **Vicinity**

- Boyd Cave
- Skeleton Cave – closed at the time of our trip to protect bats

**Fort Rock**

**Hole-in-the-Ground**

**Crater Lake National Park** – suggested stops

- Cloudcap View – a great spot to look at wildflowers
- Sun Notch hike
- Boat trip from Cleetwood Cove around the lake is highly recommended
- Pumice Desert

**McKenzie Pass area near Bend, OR** - hike across lava field to vent

**Metolius River** – view the headwaters of this beautiful river and hike along the Metolius River trail