



The Columbia River Gorge

The Columbia River cuts through the Cascades to emerge just north of Portland into the Puget Willamette Trough. The Willamette Valley (the northern end of which appears at left) was not cut by the river which drains it but was formed by the depression of the Willamette Lowland and simultaneous uplift of the Coast Range. Its remarkably flat surface is in part the result of the repeated deposition of Missoula Flood sediments (see pages 134–135). East of the Willamette Valley, the Cascade Range includes the Old Cascades,

formed about 40 million years ago, and the spectacular and geologically young stratocone volcanoes of the High Cascades, including Mount Hood. The Old Cascades are deeply eroded, displaying many fractures and fault lines which water and glacial erosion followed. Dormant but not extinct, Mount Hood rises to 11,240 feet, interrupting wet marine winds and precipitating the heavy snows that perpetuate its remaining active glaciers. Glacial canyons fan out from the peak in a radial pattern, probable routes for the mudflows which would follow a major eruption and

threaten neighboring communities such as Gresham, Troutdale, Hood River and Parkdale. Major eruptions 15,000 years ago built up layers of volcanic rock up to 500 feet thick on the south and southwest flanks of Mount Hood. The Columbia Gorge follows a boundary between newer volcanic rocks south of the river and older volcanics to the north. The south walls of the Gorge rise as nearly vertical cliffs, while the north slopes have repeatedly failed in large landslides. A major landslide (see page 141) occurred 300 years ago near Bonneville.