

Our Changing Continent

An introduction to plate tectonics.

A Free Electronic Field Trip (Grades 4-9)
April 2, 2003, Noon-1:00 PM ET.

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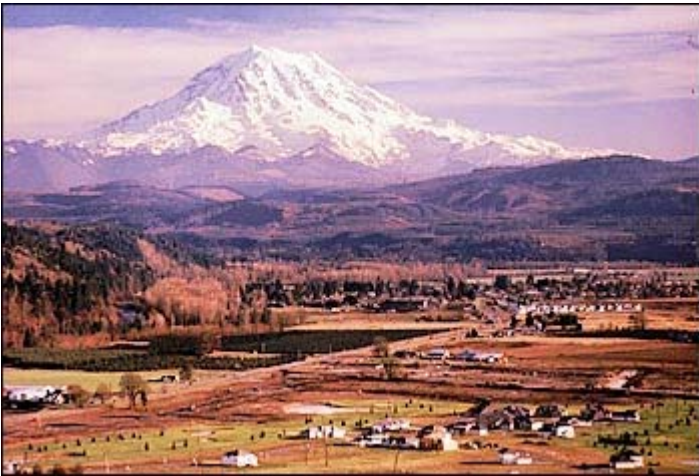
Earthquakes and Volcanoes

The debate about Wegener's *continental drift theory* rested on four major scientific developments that have provided the form for the current theory of plate tectonics: knowledge of the ocean floor, confirmation of the repeated reversals of the Earth's magnetic field in the geologic past, the hypothesis of seafloor spreading, and precise documentation of the world's earthquake and volcanic activity as concentrated along oceanic trenches and submarine mountain ranges.

By the late 1920s, seismologists were beginning to identify several prominent earthquake zones parallel to the oceanic trenches. The study of global seismology advanced in the 1960s with the establishment of the Worldwide Standardized Seismograph Network (WWSSN). Instrumentation of seismic event allowed WWSSN seismologists to map precisely the zones of earthquake concentration worldwide.

The recognition of a connection between earthquake activity and oceanic trenches and oceanic ridges confirmed the insights of Dietz and Hess, and substantiated Wegener's continental *drift theory*.

Snow-capped Mt. Rainier, a volcano built by plate tectonics.



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