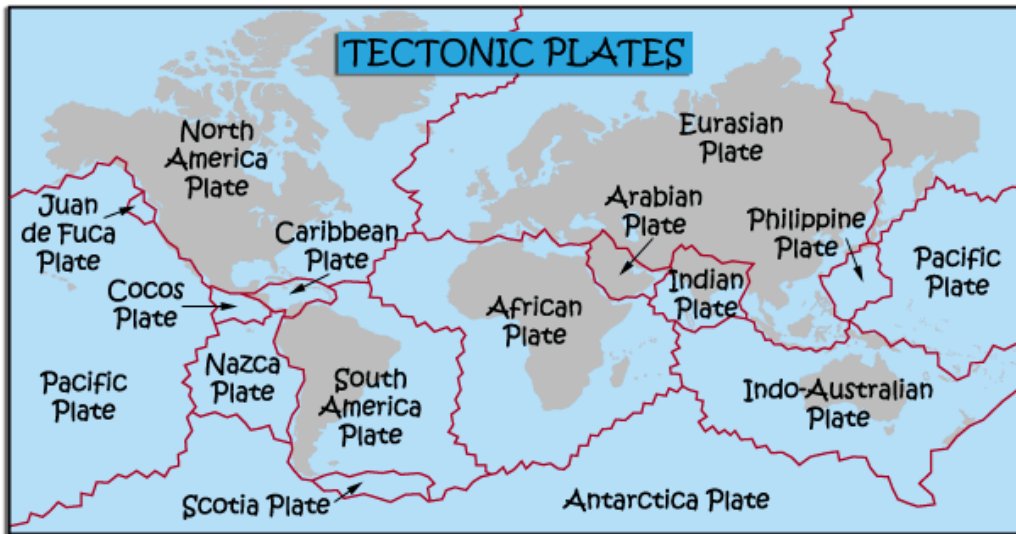
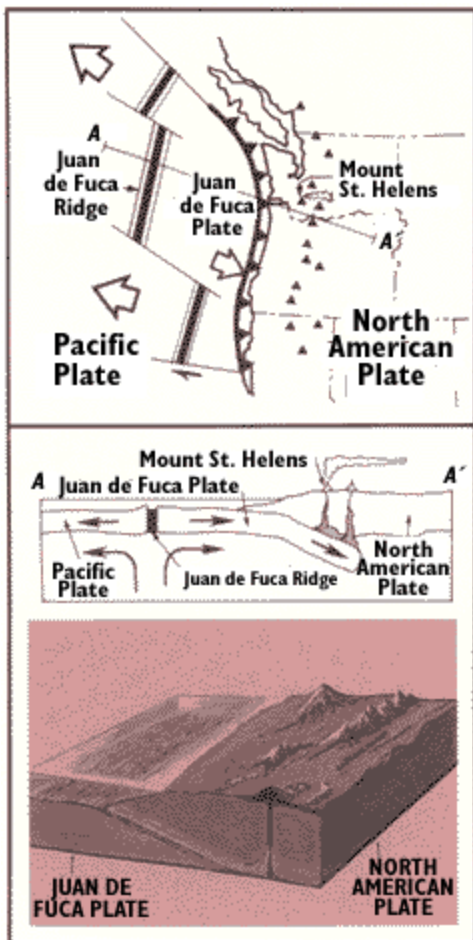


Accelerated information on tectonic plates and the fault line of the Juan de Fuca Plate



According to the now generally accepted "plate-tectonics" theory, scientists believe that the Earth's surface is broken into a number of shifting slabs or plates, which average about 50 miles in thickness. These plates move relative to one another above a hotter, deeper, more mobile zone at average rates as great as a few inches per year. Most of the world's active volcanoes are located along or near the boundaries between shifting plates and are called "plate-boundary" volcanoes. However, some active volcanoes are not associated with plate boundaries, and many

of these so-called "intra-plate" volcanoes form roughly linear chains in the interior of some oceanic plates. The Hawaiian Islands provide perhaps the best example of an "intra-plate" volcanic chain, developed by the northwest-moving Pacific plate passing over an inferred "hot spot" that initiates the magma-generation and volcano formation process. The peripheral areas of the Pacific Ocean Basin, containing the boundaries of several plates, are dotted by many active volcanoes that form the so-called "Ring of Fire." The "Ring" provides excellent examples of "plate boundary" volcanoes, including Mount St. Helens.



The accompanying figure shows the boundaries of lithosphere plates that are presently active. The double lines indicate zones of spreading from which plates are moving apart. The lines with barbs show zones of underthrusting (subduction), where one plate is sliding beneath another. The barbs on the lines indicate the overriding plate. The single line defines a strike-slip fault along which plates are sliding horizontally past one another. The stippled areas indicate a part of a continent, exclusive of that along a plate boundary, which is undergoing active extensional, compressional, or strike-slip faulting.

Information obtained from pubs.usgs.gov/gip/volc/fig37.html