**Plate Boundaries**

by John Carl Villanueva on September 10, 2009

In Plate Tectonic Theory, the **lithosphere** is broken into **tectonic plates**, which undergo some large scale motions. The boundary regions between plates are aptly called **plate boundaries**. Based upon their motions with respect to one another, these plate boundaries are of three kinds: divergent, convergent, and transform.

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**Divergent Boundaries**

[**Divergent boundaries**](http://www.universetoday.com/38568/divergent-boundaries/) are those that move away from one another. When they separate, they form what is known as a rift. As the gap between the two plates widen, the underlying layer may be soft enough for molten lava underneath to push its way upward. This upward push results in the formation of volcanic islands. Molten lava that succeeds in breaking free eventually cools and forms part of the ocean floor.

Some formations due to [divergent](http://www.universetoday.com/39760/plate-boundaries/) plate boundaries are the **Mid-Atlantic Ridge** and the Gakkel Ridge. On land, you have Lake Baikal in Siberia and Lake Tanganyika in East Africa.

**Convergent Boundaries**

**Convergent boundaries** are those that move towards one another. When they collide, **subduction** usually takes place. That is, the denser plate gets subducted or goes underneath the less dense one. Sometimes, the plate boundaries also experience **buckling**. Convergent boundaries are responsible for producing the deepest and tallest structures on Earth.

The Marianas Trench in the South Pacific Ocean is created from subduction in an Oceanic to Continental convergent boundary. Mt. Everest is created from buckling in a Continental to Continental convergent boundary and is still continuing to grow by approximately 1 foot each year.

**Transform Boundaries**

**Transform boundaries** are those that slide alongside one another. Lest you imagine a slippery, sliding motion, take note that the surfaces involved are exposed to huge amounts of **stress** and strain and are momentarily held in place. As a result, when the two plates finally succeed in moving with respect to one another, huge amounts of energy are released. This causes **earthquakes**.

The **San Andreas fault** in North America is perhaps the most popular transform boundary. Transform boundary is also known as transform fault or conservative plate boundary.

Movements of the plates are usually just a few centimeters per year. However, due to the huge masses and forces involved, they typically result in earthquakes and volcanic eruptions. If the interactions between plate boundaries involve only a few centimeters per year, you could just imagine the great expanse of time it had to take before the land formations we see today came into being.