

# THE PHILIPPINE PLATE



Instructor: Ms. Katryn Wiese  
Subject: OCAN1 Oceanography

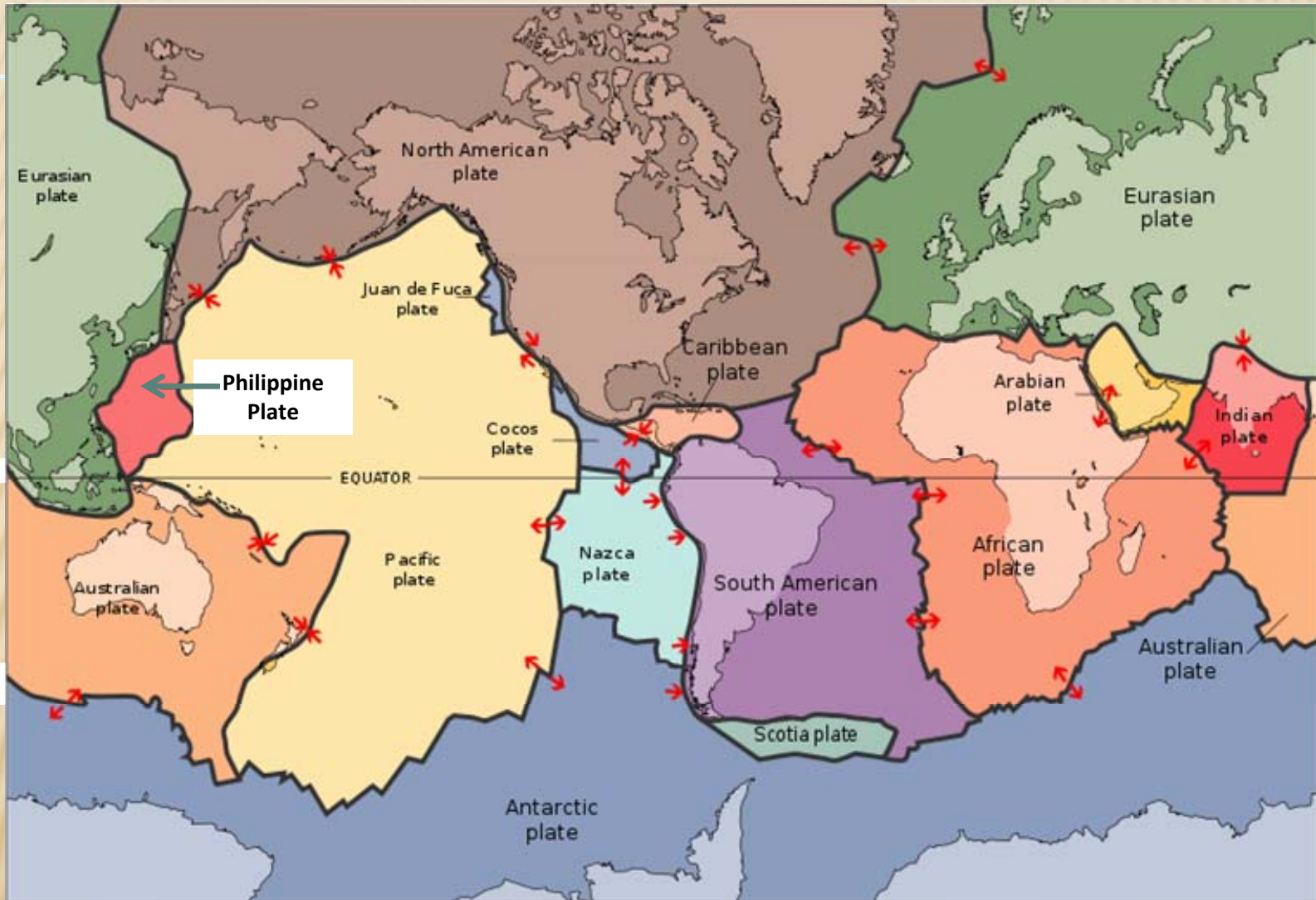
Submitted by: Frances Villalon  
Date: March 17, 2010

**Location:** Coordinates-26° N 132° E; Southeast Asia; In the western Pacific Ocean; The Philippine Plate lies beneath the Philippine Sea.

**Classification:** The Philippine Plate is a tectonic plate comprising of oceanic lithosphere.

**Features found there:** The Philippine Plate is squeezed in between the Eurasian Plate and the Pacific Plate. What makes it complex is that the Philippine Plate consists of several micro-plates squeezed in between two convergent plate margins.





# Refer to Figure A

## 2 Subduction Zones

1. Manila Trench- Northwestern Subduction Zone
2. Philippine Trench- Southeastern Subduction Zone

- The blue lines with black triangles are active subduction zones with teeth on the over-riding plate.
- The blue lines with white triangles are passive subduction zones with teeth on the over-riding plate.
- The major Philippine fault zone is shown as a red line with arrows showing the movement direction.
- The volcanoes Pinatubo and Mayon are the yellow squares. The volcanoes of the Philippines are considered as one of the most deadliest in the world because they sit above subduction zones. The Transform Fault that connects the eastern and western subduction zones may be associated with the Mayon Volcano. The Transform Fault is off-set by the north-south directed Philippine Fault.

Figure A



## Describe origins:

---

- Crust of the Philippine Sea Plate origin has a basement of ophiolitic and/or arc origin. Ophiolites are remnants of an early Mesozoic intro-oceanic arc rather than Pacific ocean floor. They are overlain by and imbricated with arc volcanic and sedimentary rocks of Late Cretaceous-Eocene age; arc plutonic rocks intrude the ophiolites
- The plutonic rocks that intrude the ophiolites are parts of the eastern Philippines and the ridges of the north Philippine Sea.
- 45 Ma—Change in Pacific Plate motion and plate reorganization.
- Products of volcanic arc at the edge of the Philippine Sea Plate: limestones, basaltic pillow lavas, and turbites.

## What makes this location oceanographically interesting?

- Philippines is an archipelago with 7, 107 islands---A chain or cluster of islands that are formed tectonically.
- The popular volcanoes Taal [Fig.1 & 2], Pinatubo [Fig.3 & 4], and Mayon [Fig.5].



Fig. 1 : A cinder cone in an acidic lake in Taal Volcano.

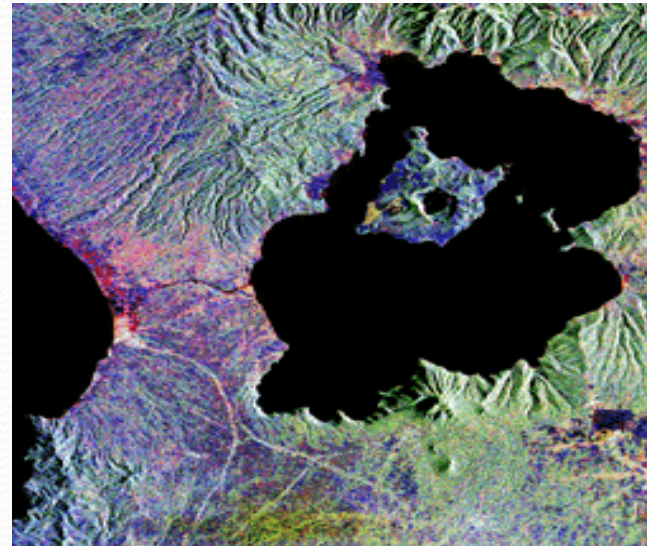


Fig. 2: Satelite image of Taal Volcano.



Fig. 3: Mount Pinatubo before 1991 eruption.



Fig. 4: Explosive eruption at Mount Pinatubo after April 1991.



Fig. 5: Mayon  
Volcano

## CONCLUSION:

For those who are unaware of what lies beneath the tropical islands of the Philippines are better off not knowing. The Philippine islands shows breathtaking beauty, yet with scientific research, some, including myself, have been provided with facts that can be lead to believe that the Philippine Plate is a dangerous location.





## BIBLIOGRAPHY

"Philippines Tectonics." What On Earth. 2010. Retrieved 10 Mar. 2010  
<<http://whatonearth.olehnielsen.dk/philippines.asp>>

"Philippine Sea Plate." Wikipedia the Free Encyclopedia. 2010. Retrieved 6 Mar. 2010  
<[http://en.wikipedia.org/wiki/Philippine\\_Sea\\_Plate](http://en.wikipedia.org/wiki/Philippine_Sea_Plate)>

"Philippines." Wikipedia the Free Encyclopedia. 2010. Retrieved 6 Mar. 2010  
<<http://en.wikipedia.org/wiki/Philippines>>

"Sorong Fault Zone". SEARG Southeast Asia Research Group. Retrieved 13 Mar. 2010  
< [http://searg.rhul.ac.uk/current\\_research/sorong\\_fault\\_zone/index.html](http://searg.rhul.ac.uk/current_research/sorong_fault_zone/index.html)>

Artist unknown. Google Images. "Taal Volcano." 2007. Photograph. Oberon Rotary. Online. Oberonrotary.wordpress.com. Retrieved 10 Mar. 2010 <<http://oberonrotary.wordpress.com/2007/06/>>

Artist unknown. Google Images. "Taal Volcano Satellite Image." Retrieved 10 Mar. 2010  
< [http://upload.wikimedia.org/wikipedia/commons/5/57/Taal\\_Volcan-Pansipit\\_River\\_satellite\\_image.gif](http://upload.wikimedia.org/wikipedia/commons/5/57/Taal_Volcan-Pansipit_River_satellite_image.gif)>

T.J Casadevall. U.S. Geological Survey. "Mt. Pinatubo 1991 Eruption." Retrieved 10 Mar. 2010  
< <http://www.ucar.edu/communications/staffnotes/0604/shorttakes.shtml>>

Artist unknown. Google Images. "Mt. Pinatubo Before Eruption." Retrieved 10 Mar. 2010  
< <http://www.uwec.edu/jolhm/EH2/Lennon/pictures.htm>>

Buddy Dela Cruz.2008. "Mayon Volcano." Retrieved 10 Mar. 2010  
< <http://buddy-dubaibase.blogspot.com/2008/05/new-seven-wonders-of-nature.html>>

Artist unknown. Google Images. "Philippine Islands." Retrieved 10 Mar. 2010  
<<http://www.cnn.com/WORLD/9605/26/philippines.straggler/philippines.jpg>>

"Philippine Plate Image." Retrieved 9 Mar. 2010  
<<http://pubs.usgs.gov/gip/dynamic/slabs.html>>



**The End.**