**Tectonic Evolution of California**

**a. Interpret geologic maps as a basis for understanding the tectonic evolution of California in terms of plate margins (i.e., Atlantic-type passive margin, Japanese volcanic arc, Andean arc, and faulted margin**  
  
Around 20 mya, the Pacific Plate and North American Plate first touch base. At 18 myo the pacific plate is moving to the northwest and now blocks start to define themselves. You have eventually the coast of California. And the coast by Santa Barbara becomes the Transverse Ranges. The initial opening of the deep ocean basin formed around 16 mya. And by 12.5 mya are now well developed (around the end of the Myocene). All the troughs are beginning to fill with sediments. Around 6 mya, as the Pleistocene is starting, the Transfer Ranges has almost rotated, but the basin started crunching and new basins are starting to form. The folding of the sediments is where the oil deposits of Ca are located. And final stage, in this area we have same behavior inland. That's why we have big off shore rigs of Ca. The basins we were looking at are now are the top most edges that are sticking out of the water are called the channel islands.